

To the knowledge of the genus *Harpalus* Latreille, 1802 of the Eastern Palearctic (Coleoptera: Carabidae)

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К познанию рода *Harpalus* Latreille, 1802 Восточной Палеарктики (Coleoptera: Carabidae)

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Abstract. The subgenus *Cephalophonus* Ganglbauer, 1892 and the two species-groups (the *remboides* and *ingenuus* groups) of the nominotypical subgenus of the genus *Harpalus* Latreille, 1802 are revised, their taxonomic position and geographical distribution are discussed, and keys to species and subspecies are provided. The *remboides* and *ingenuus* groups are treated as members of the *smaragdinus* phylogenetic stock distributed mainly in arid and semiarid areas of the eastern part of the Tethyan Region of the Palearctic. Within the *remboides* group, *H. medvedevi* sp. n. is described from Kazakhstan and western China. Within the *ingenuus* group, *H. ingenuus* Tschitschérine, 1898 is considered a polytypical species with three subspecies: *H. i. ingenuus* (central Alai Mountain Range), *H. i. lailakensis* ssp. n. (eastern Turkestan Mountain Range), and *H. i. alajanicus* Jedlička, 1957, stat. n. (eastern Alai Mountain Range). The distinctive characters of the *affinis* group are also indicated. Within this group, two new subspecies of *H. glasunovi* are described: *H. g. spiculifer* ssp. n. (Western Tien Shan) and *H. g. opaculus* ssp. n. (Northern, Central and Inner Tien Shan). The following new synonymies are ascertained: *H. remboides* Solsky, 1844 = *H. ferghanensis* Tschitschérine, 1899, syn. n.; *H. cephalotes somcheticus* Schauburger, 1933, stat. n. = *Scybalicus biroi* Jedlička, 1952, syn. n. Lectotypes are designated for *H. ferghanensis* Tschitschérine, 1899, *H. ingenuus* Tschitschérine, 1898, and *H. arcuatus* Tschitschérine, 1898.

Key words. Coleoptera, Carabidae, *Harpalus*, *Scybalicus*, Palearctic, taxonomy, distribution.

Резюме. Выполнена таксономическая ревизия подрода *Cephalophonus* Ganglbauer, 1892 и двух видовых групп (группы *remboides* и *ingenuus*) номинативного подрода рода *Harpalus* Latreille, 1802. Обсуждаются их положение внутри рода и географическое распространение. Приводятся таблицы для определения видов и подвидов. Группы *remboides* и *ingenuus* рассматриваются в составе филогенетической ветви *smaragdinus*, распространенной главным образом в аридных и семиаридных районах восточной части области Древнего Средиземья. В составе группы *remboides* описан новый вид, *H. medvedevi* sp. n., из Казахстана и Западного Китая. *H. ingenuus* Tschitschérine, 1898 из группы *ingenuus* рассматривается как политипический вид с тремя подвидами: *H. i. ingenuus* (центральная часть Алайского хребта), *H. i. lailakensis* ssp. n. (восточная часть Туркестанского хребта) и *H. i. alajanicus* Jedlička, 1957, stat. n. (восточная часть Алайского хребта). Приводятся также диагностические признаки группы *affinis*. В составе этой группы описаны два новых

подвида *H. glasunovi*: *H. g. spinulifer* ssp. n. (Западный Тянь-Шань) и *H. g. opaculus* ssp. n. (Северный, Центральный и Внутренний Тянь-Шань). Установлена следующая синонимия: *H. remboides* Solsky, 1844 = *H. ferghanensis* Tschitschérine, 1899, syn. n.; *H. cephalotes somcheticus* Schaubberger, 1933, stat. n. = *Scybalicus biroi* Jedlička, 1952, syn. n. Для *H. ferghanensis* Tschitschérine, 1899, *H. ingenuus* Tschitschérine, 1898 и *H. arcuatus* Tschitschérine, 1898 обозначены лектотипы.

Ключевые слова. Coleoptera, Carabidae, *Harpalus*, *Scybalicus*, Palaearctic, таксономия, распространение.

Introduction

The following abbreviations are used for the depositories of the examined material: ISEAN – Institute of Systematics and Ecology of Animals, Siberian Branch, Russian Academy of Sciences, Novosibirsk, Russia; IZB – Institute of Zoology, Beijing, China; MNHN – Muséum National d’Histoire Naturelle, Paris, France; MPU – Moscow Pedagogical University, Moscow, Russia; OÖLL – Oberösterreichisches Landesmuseum, Linz, Austria; TMB – Természettudományi Múzeum, Budapest, Hungary; ZISP – Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia; ZMM – Zoological Museum of the Moscow State University, Moscow, Russia; ZMO – Zoological Museum of the Odessa State University, Odessa, Ukraine; cBEL – coll. I.A. Belousov (St. Petersburg, Russia); cFCCH – coll. S. Facchini, Piacenza, Italy; cJEAN – coll. C. Jeanne (Langon, France); cIKAB – coll. I.I. Kabak (St. Petersburg, Russia); cKAL – coll. J. Kaláb (Jinačovice, Czech Republic); cKLM – coll. A. Klimenko (Tver’, Russia); cKOM – coll. E.V. Komarov (Volgograd, Russia); cMIKH – coll. V.A. Mikhailov (Tsyurupinsk, Ukraine); cOVCH – coll. S.V. Ovchinnikov (Bishkek, Kirghizia); cPCH – coll. A.V. Puchkov (Kiev, Ukraine); cSCK – coll. R. Sciaky (Milano, Italy); cWR – coll. D.W. Wrase (Berlin, Germany).

Measurements were taken as follows: body length from anterior margin of clypeus to elytral apex; width of head as maximum linear distance across head, including compound eyes, and as minimum linear distance across neck constriction just behind eyes; length of pronotum along its median line; length of elytra from basal ridge in scutellar region to apex of sutural angle; maximum width of pronotum (WPmax) and elytra (WE) in their broadest point; minimum width of pronotum (WPmin) in its narrowest point near hind angles.

Genus *Harpalus* Latreille, 1802

Subgenus *Cephalophonus* Ganglbauer, 1892

Cephalophonus Ganglbauer, 1892: 340, 345 (as a subgenus of *Ophonus* Dejean, 1821). Type species *Harpalus cephalotes* Fairmaire & Laboulbène, 1854, by monotypy.

Description. Body punctured and pubescent, including labrum, tempora, external scrobe of mandibles, 1st and 2nd antennomeres and tarsi dorsally; setae on pronotum and elytra reclinate. Eyes hairless, widely separated from buccal fissure ventrally. Labium (Fig. 12) with acute mental tooth and narrow epilobes; paraglossae setaceous at margins; basal labial palpomere without oblique carina ventrally (Fig. 13). Pronotum not bordered along basal margin, with unisetose sides. Elytra without any discal pores (at least pores invisible against background of dense puncturation of intervals). Anal sternum at apex slightly emarginate in male and pointed in female. Anal tergum in male angularly rounded at apex (Fig. 15), in female emarginate bilaterally, projecting angularly posteriad and narrowly rounded at apex (Fig. 16). Metacoxae (Fig. 14) without additional posteromedial setigerous pores, each only with two obligatory fixed setigerous pores. Metafemur with three (sometimes four) setigerous pores along posterior margin. Aedeagus (Figs 8–11) with apical orifice shifted to left; terminal lamella flat, without any capitulum at apex; internal sac with short and broad spine at apex of median lobe.

Composition. The subgenus includes only *Harpalus cephalotes* Fairmaire & Laboulbène, 1854 with two subspecies from semiarid areas of Europe and West Asia.

Remarks. Due to the densely punctured and pubescent body, *Cephalophonus* was originally described as a subgenus of the genus *Ophonus* Dejean, 1821. Until recently, most workers also considered this taxon within *Ophonus* (see, for example, Kryzhanovskij, 1983; Sciaky, 1987). However, *Cephalophonus* possesses all the distinctive features of the genus *Harpalus* and should be incorporated in the

latter (Schauberger, 1933; Kataev in Kryzhanovskij et al., 1995: 140). Schauberger (1933) was probably the first to include *Cephalophonus* in *Harpalus* and regard the latter as being distinct from *Ophonus* on the basis of ciliate margins of paraglossae, narrow epilobes of mentum and elongate apical stylomere (in contrast to this, *Ophonus*, according to Schauberger, has glabrous paraglossae, strongly widened anteriorly epilobes of mentum and broad apical stylomere). I fully share this opinion. In addition, according to my data, like most *Harpalus* and in contrast to all *Ophonus*, *Cephalophonus* possesses the cylindrical labial basal palpomere without oblique carina ventrally (Fig. 13) and the metacoxa without posteromedial pore (Fig. 14).

There is also disagreement among the specialists about the taxonomic rank of *Cephalophonus* treated in different classifications as a species group, subgenus or a separate genus. Here I consider *Cephalophonus* a subgenus of *Harpalus* following the system proposed in the recent Palaearctic catalogue (Kataev et al., 2003: 370). Within this genus, *Cephalophonus* belongs, in my opinion, to the *Pseudoophonus* stock (lineage), which comprises also *Cephalomorphus* Tschitschérine, 1897, *Pseudoophonus* Motschulsky, 1844, *Platus* Motschulsky, 1899, *Megapangus* Casey, 1914, and probably *Plectralidus* Casey, 1914 (Kataev in Kryzhanovskij et al., 1995: 140). Like other large units of *Harpalus*, this phylogenetic stock can be defined only polythetically, based on several non-specific features because there is no any apomorphic character common to all its members. Nevertheless, the most important distinctive characters of the *Pseudoophonus* stock (median lobe of aedeagus without or with hardly recognizable apical capitulum, 3rd elytral interval without dorsal pore, and tarsi with more or less developed dorsal pubescence) are present in *Cephalophonus*. From other members of this stock, *Cephalophonus* is easily differentiated by the distinctly punctured and pubescent head and the modified anal sternum and tergum (Figs 15, 16). The latter character is known also for one of the two species of *Megapangus* (*H. caliginosus* Fabricius, 1775), but the head in this species is not punctured and glabrous.

***Harpalus cephalotes* Fairmaire & Laboulbène, 1854**

Harpalus (Ophonus) cephalotes Fairmaire & Laboulbène, 1854: 126.

***Harpalus cephalotes cephalotes* Fairmaire & Laboulbène, 1854** (Figs 1–4, 8, 9, 12–16)

Harpalus (Ophonus) cephalotes Fairmaire & Laboulbène, 1854: 126. Type locality: “montagnes de la Dordogne”, France.

Harpalus rayei Linder, 1864: 250. Type locality: Buda, Hungary.

Ophonus planiusculus Kraatz, 1873: 197. Type locality: “bei Somerda in Thuringen”, Germany.

Description. Sides of pronotum more or less rectilinearly converging posteriad, at most occasionally only hardly sinuate before obtuse basal angles with blunt apex (Figs 1–4). Coloration usually darker: dorsum dark brown to black, underside slightly paler, reddish brown; palpi, antennae and legs brown or reddish brown. Male genitalia as in Figs 8, 9.

Proportions (based upon 7 ♂ and 6 ♀): WP/LP = 1.32–1.43; LE/WE = 1.66–1.76 in male and 1.63–1.73 in female; LE/LP = 2.68–2.83 in male and 2.76–2.87 in female; WE/WP = 1.15–1.21 in male and 1.17–1.23 in female; WHmax/WP = 0.72–0.76 in male and 0.74–0.77 in female; WHmin/WP = 0.60–0.64 in male and 0.62–0.64 in female.

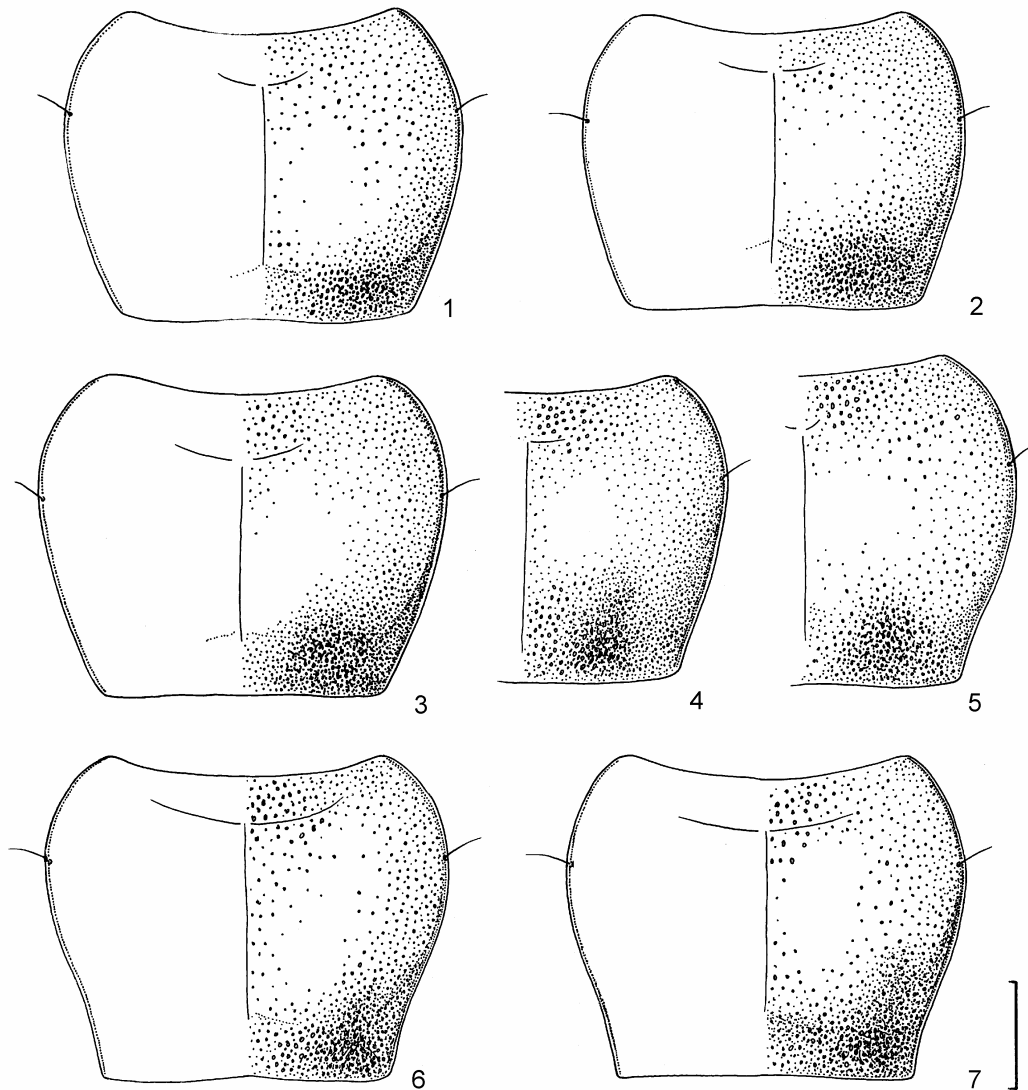
Body size: length 12.0–13.1 mm in male and 12.0–14.5 mm in female; width 4.4–4.6 mm in male and 4.3–4.5 mm in female.

Type material. Syntype of *Harpalus (Ophonus) cephalotes*: ♂, labelled “*Ophonus cephalotes* L. Fairm, type, ... [unreadable]” (specimen from the collection of L. Fairmaire, now in MNHN). In addition, two specimens also from the collection of L. Fairmaire (now in MNHN) which may belong to the type series: 1 ♀, “*O. Cephalotes*, la Bernerie”; 1 ♂, “La Pernerie Marnottan”.

Other material. France. 1 ♀, “La Merne, Loire Inf., C. Brisout” (MNHN); 1 ♀, “La Bernerie, pres Pornie, C. Brisout” (MNHN); 1 ♂ 1 ♀, “Loire Inf., Les Moutiers” (ZISP). Hungary. 18 ♂, 3 ♀, Tiszasüly, Dr. Lenczi, 1956 (TMB); 1 ♀, Hortobágy, 20 V 1956, Dr. Lenczi leg. (TMB). Moldova. 1 ♂, Kitskany, 7 VIII 1968, expedition of Institute of Parasitology and Phytopathology (ZISP). Ukraine. 1 ♀, “Kajdanò, Com. Bereg.”, “coll. Dr. R. Streda” [Zakarat’ye Prov., Beregovo Distr., Kaidanovo Vill.] (TMB); 1 ♂, Kharkov Prov. (ZISP); 1 ♂, “Kol. Gross-Libental, near Odessa”, 25 VII 1927, D. Znojko leg. (ZISP); 1 ♀, env. of Odessa, right bank of Khadzhibeiskij Lagoon, 6 VIII 1923, D. Znojko leg. (ZISP); 1 ♂, 1 ♀, Askania-Nova, 1892, S.I. Medvedev leg. (ZISP); the Crimea: 1 ♂, 2 ♀, Krymskij Distr., “kh[utor]. [= farmstead] Lenina”, 15 VII 1931 (ZISP); 1 ♀, Simferopol, Salgir valley, 13 VII 1899, A. Bazhenov leg. (ZISP); 1 ♀, Cape Kazantip, 28 VII 1994, V. Krivokhatsky leg. (ZISP); 1 ♂, Kerch, 1 VI 1901, Yatsentkovsky leg. (ZISP); 1 ♀, same locality, 8.VI.1902 (ZISP); 1 ♂, same locality, 20 VI 1916 (ZISP); 1 ♀, Kerch env., 27 VI 1908, A. Kiritshenko leg. (ZISP). Russia. Rostov Prov.: 1 ♀, Olginskaya Vill., at light, 26 VII 1963, Minoranskij leg. (ZISP); 3 ♂, 3 ♀, Aksai

Distr., 25 VIII 1973, Sorokin leg. (ZISP). Krasnodar Terr.: 1 ♂, 1 ♀, Taman, env. of Akhtanizovskaya Vill., 28 V 1989, B. Kataev leg. (ZISP); 2 ♂, 1 ♀, Slavyansk-na-Kubani env., 5 VII 1971 and 2 VI 1972, Kupershtein leg. (ZISP). Stavropol Terr.: 1 ♂, 1 ♀, Primanychskaya Steppe (ZISP). Samara Prov.: 1 ♂, 2 ♀, "Samara" (ZISP; TMB). Saratov Prov.: 9 ♂, 4 ♀, Marks Distr., Berezovka Vill. env., steppe, 22 V 1980, B. Kataev leg. (ZISP); 1 ♂, 1 ♀, same locality, rye field, 25 V 1980, B. Kataev leg. (ZISP). Volgograd Prov.: 1 ♂, Pallasovka Vill. env., dry steppe, 1996, I. Lyubechanskiy leg. (ISEAN). K a z a k h s t a n . 1 ♂, 1 ♀, Uralsk env., 15 and 31 VII 1906, D. Borodin leg. (ZISP). T u r k e y . 1 ♂, "Balget [= Balgat; now part of Ankara] Ankara, 1936, Dr. Vasvari" (TMB). G e o r g i a . 1 ♀, Marneuli, 18 VII 1976, O. Kryzhanovskij leg. (ZISP); 1 ♀, Borzhom, 12 IX 1903, K. Prave leg. (ZISP); 1 ♂, Akhaltsikhe, Adygeni near Kotyrtskh Pass, 1300 m, 25 VI 1964, Ja. Dzhabazishvili leg. (ZISP); 1 ♂, Kumisi near Tbilisi, 3–24 VI 1987, Wrase & Schülke (cWR; D. Wrase det.; not examined); 2 ♂, 2 ♀, "Caucasus, Meskisch. Gb. [= Meskhetskiy Mt. R.], Leder, Reitter" (TMB).

Not located: 1 ♂, "Grebenaq" (ZISP); 1 ♂, 1 ♀, "775, Verur, Böhman, *H. planiusculus*" (ZISP); 1 ♂, "Bourgneuf" (TMB); 1 ♀, "Balkan" (TMB).



Figs 1–7. *Harpalus cephalotes* Fairm., pronotum. 1–4 – *H. c. cephalotes*; 5–7 – *H. c. somcheticus* Schaub. (1 – France; 2 – Saratov Prov.; 3 – Georgia, Akhaltsikhe; 4 – Uralsk env.; 5, 6 – Turkey, holotype and paratype of *Scybalicus biroii* Jedl.; 7 – Armenia, Dzhrvezh). Scale = 1.0 mm.

Distribution. The subspecies is widely distributed across southern, central and eastern Europe from France to western Kazakhstan occurring also in the north-western Turkey and Transcaucasus. It was recorded from France, Belgium, Austria, Germany, Czech Republic, Slovakia, Poland, Hungary, Bulgaria, Serbia, Romania, Moldova, Ukraine, European part of Russia, Turkey, Georgia, and western Kazakhstan (Kataev et al., 2003). The record from Armenia (l. c.) should be referred to the subspecies *somcheticus*. Halophilous.

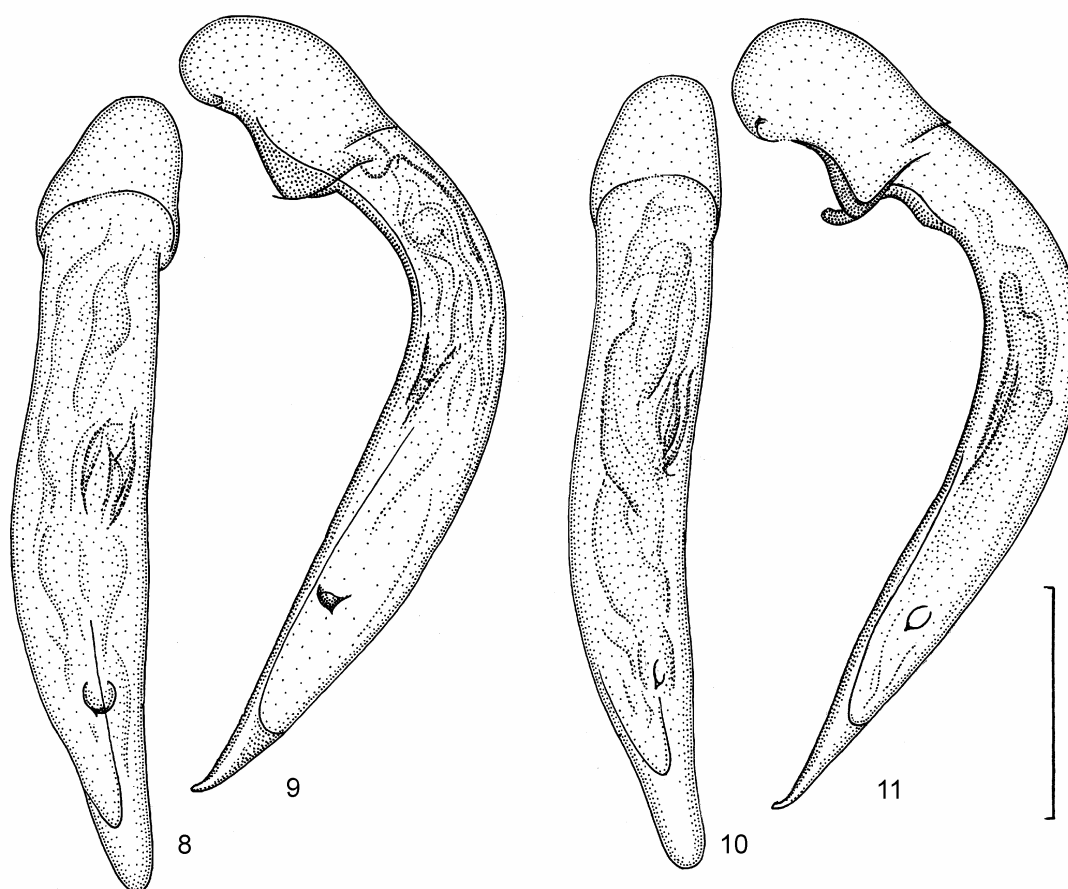
***Harpalus cephalotes somcheticus* Schauberger, 1933, stat. n.** (Figs 5–7, 10, 11)

Harpalus (Cephalophonus) somcheticus Schauberger, 1933: 130. Type locality: “Alagoes” (= Aragats), Armenia.
Scybalicus biroi Jedlička, 1952: 80, **syn. n.** Type locality: “Kleinasien: Diyarbekir [= Diyarbakir]”, SE Turkey.

Description. Sides of pronotum usually sinuate basally; basal angles less obtuse than in the nominotypical form, sometimes subrectangular, with sharper apex (Figs 5–7). Paler, more or less unicolorous, brownish yellow to reddish brown. Male genitalia illustrated in Figs 10, 11.

Proportions (based upon 2 ♂ and 1 ♀): WP/LP = 1.30–1.42; LE/WE = 1.69–1.75 in male and 1.65 in female; LE/LP = 2.73–2.82 in male and 2.90 in female; WE/WP = 1.20–1.23 in male and 1.24 in female; WHmax/WP = 0.76 in male and 0.76 in female; WHmin/WP = 0.61 in male and female.

Body size: length 13.0–14.0 mm in male and 15.0 mm in female; width 4.5–5.0 mm in male and 5.4 mm in female.



Figs 8–11. *Harpalus cephalotes* Fairm., median lobe of aedeagus. 8, 9 – *H. c. cephalotes* (Saratov Prov.); 10, 11 – *H. c. somcheticus* Schaub. (Turkey, holotype of *Scybalicus biroi* Jedl.). 8, 10 – dorsal aspect; 9, 11 – lateral aspect. Scale = 1.0 mm.

Type material. Holotype of *Scybalicus biroi*: ♂, Turkey, “Dujarbekir, 1937.VII.6–7”, “leg. Dr. Vasvári”, “*Biroi* sp. n., det. Ing. Jedlička”, “Typus”, “*Scybalicus Biroi* sp. n., det. Ing. Jedlička”, “Holotypus, *Scybalicus biroi* Jedlička” (TMB). Paratype: ♀, same data as holotype but labelled as “Cotype” (TMB).

Other material. Turkey. 2 ♂, 2 ♀, Bingöl, Kuruca geç., 2390 m, 16 VI 1986, Kadlec & Voříšek leg. (cWR; D. Wrase det.; not examined); 3 ♂, Sivas, Karabayir Pass, 6 km N Şerefiye, ca 1900 m, steppe, 29 VI 1992, W. Heinz leg. (cWR; D. Wrase det.; not examined); 2 ♂, 1 ♀, Sivas, Kisildağ Pass, W Refahiye, 2200 m, 29 VI 1992, W. Heinz leg. (cWR; D. Wrase det.; not examined). Armenia. 1 ♂, Dzhrvezh, Erevan env., 12 VII 1959, V. Kurnakov leg. (ZISP).

Distribution. Known from arid areas of southwestern Transcaucasia (southwestern Armenia) and eastern Anatolia (Turkey). It seems likely that the record of *H. cephalotes* from Israel (Chikaturunov, 2000) should also be referred to this subspecies.

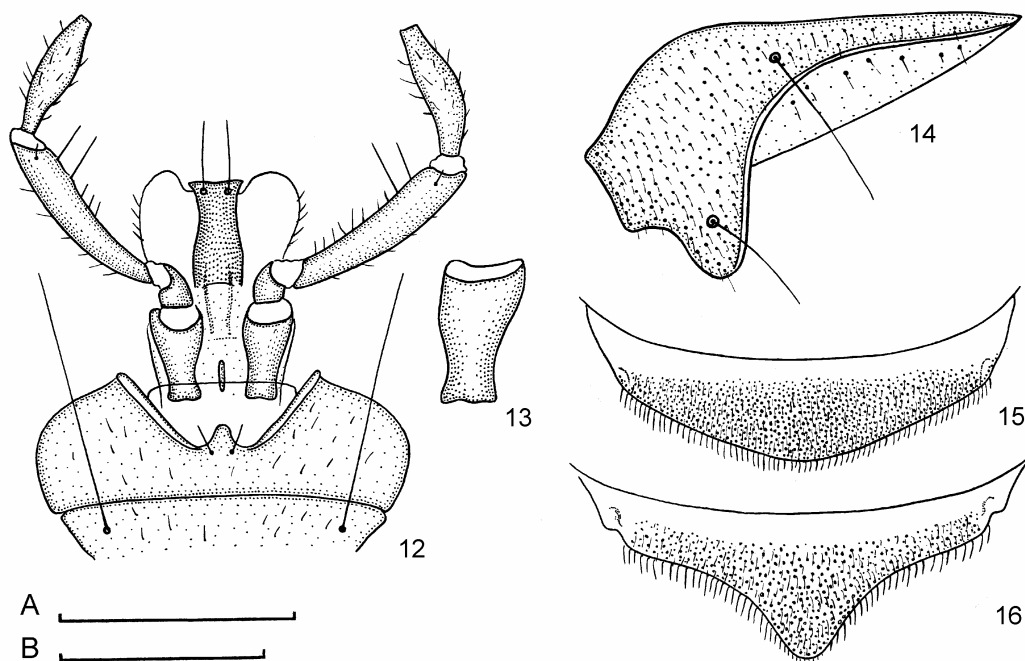
Remarks. Schaubberger (1933) described *H. somcheticus* as a separate species on the basis of a single male from Aragats Mountain, Armenia. According to Iablokoff-Khnzorian (1976), it was probably collected at the southern foot of Aragats since the species occurs only on lowland saline soils. Sciaky (1987) considered *H. somcheticus* conspecific with *H. cephalotes* but the differences in the shape of pronotum and coloration between the two forms and their separate ranges are sufficient, in my opinion, to treat them as two subspecies. The male genitalia in the both forms are very similar (Figs 8–11).

Scybalicus biroi was described from five specimens collected in Diyarbakir, southeastern Turkey. Examination of the type specimens of this taxon has revealed the conspecificity of the latter with *H. c. somcheticus*.

Subgenus *Harpalus* s. str.

The *remboides* group

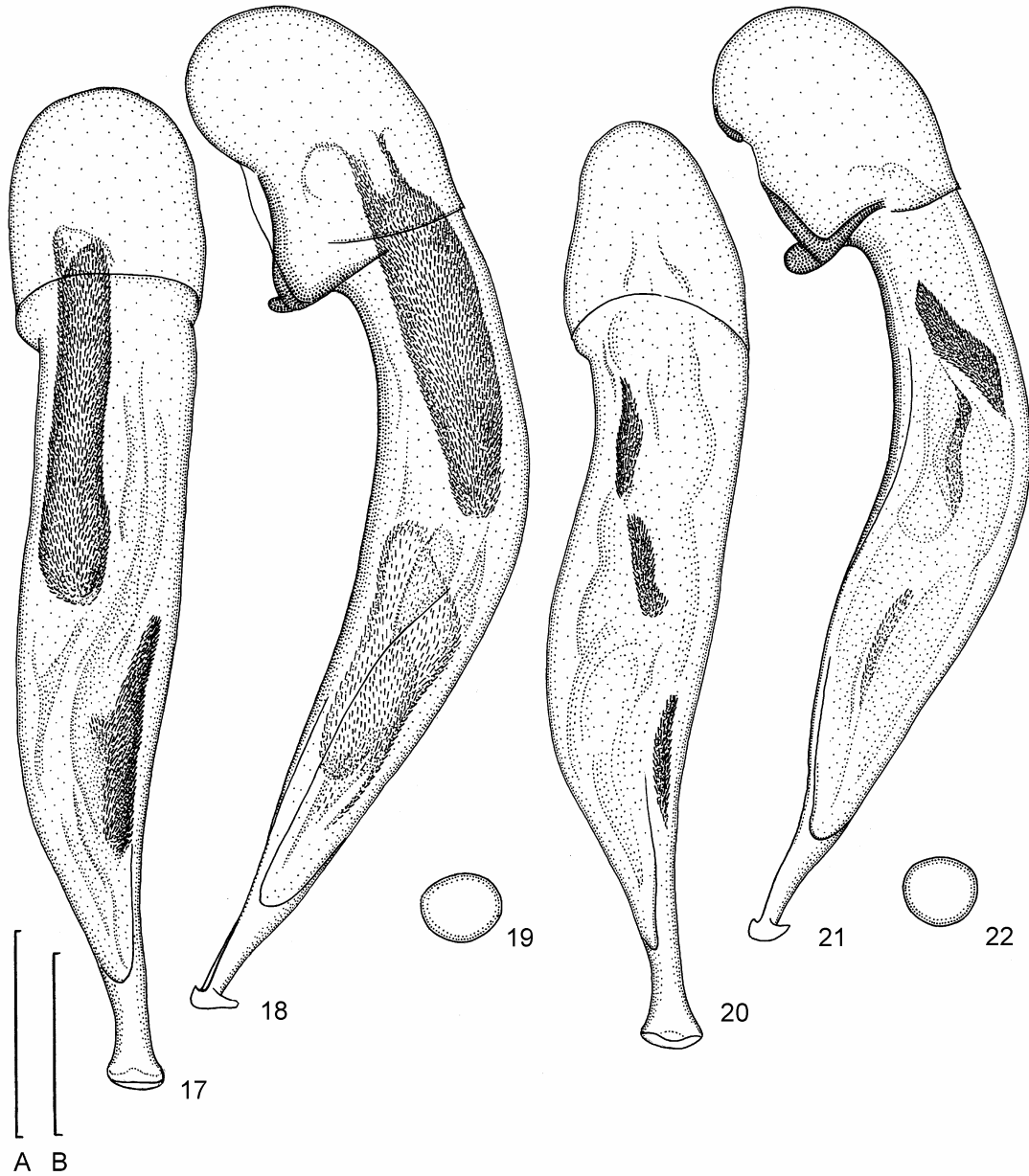
Diagnosis. Large or medium-sized beetles; pronotum with ciliate basal edge, not punctured or with few fine punctures in and around basal foveae; elytra with only one discal pore on 3rd interval and with glabrous basal bead; abdominal sternites largely glabrous; anal sternum without pronounced sexual di-



Figs 12–16. *Harpalus cephalotes cephalotes* Fairm. 12 – labium, 13 – basal labial palpomere, 14 – left metacoxa, 15 – male anal tergum, 16 – female anal tergum. Scales: A = 1.0 mm (Figs 12, 14–16); B = 0.5 mm (Fig. 13).

morphism; ventroapical tubercle of protibia with one spine at apex; mesotibia of male without tubercle on its inner surface; metatarsus slender, with comparatively long 1st metatarsomere; terminal lamella of aedeagus long, with nearly transverse apical capitulum (more or less oval in view from behind: Figs 19, 22, 25); internal sac with two or three spiny patches and without teeth.

Description. Body black, with labrum externally and bases of mandibles usually slightly paler; palpi dark brown, with paler apical palpomeres; antennae with 1st antennomere yellowish brown and other palpomeres more or less infuscate (2nd–5th most intensively); femora and tibiae dark brown to black, tarsi brown.

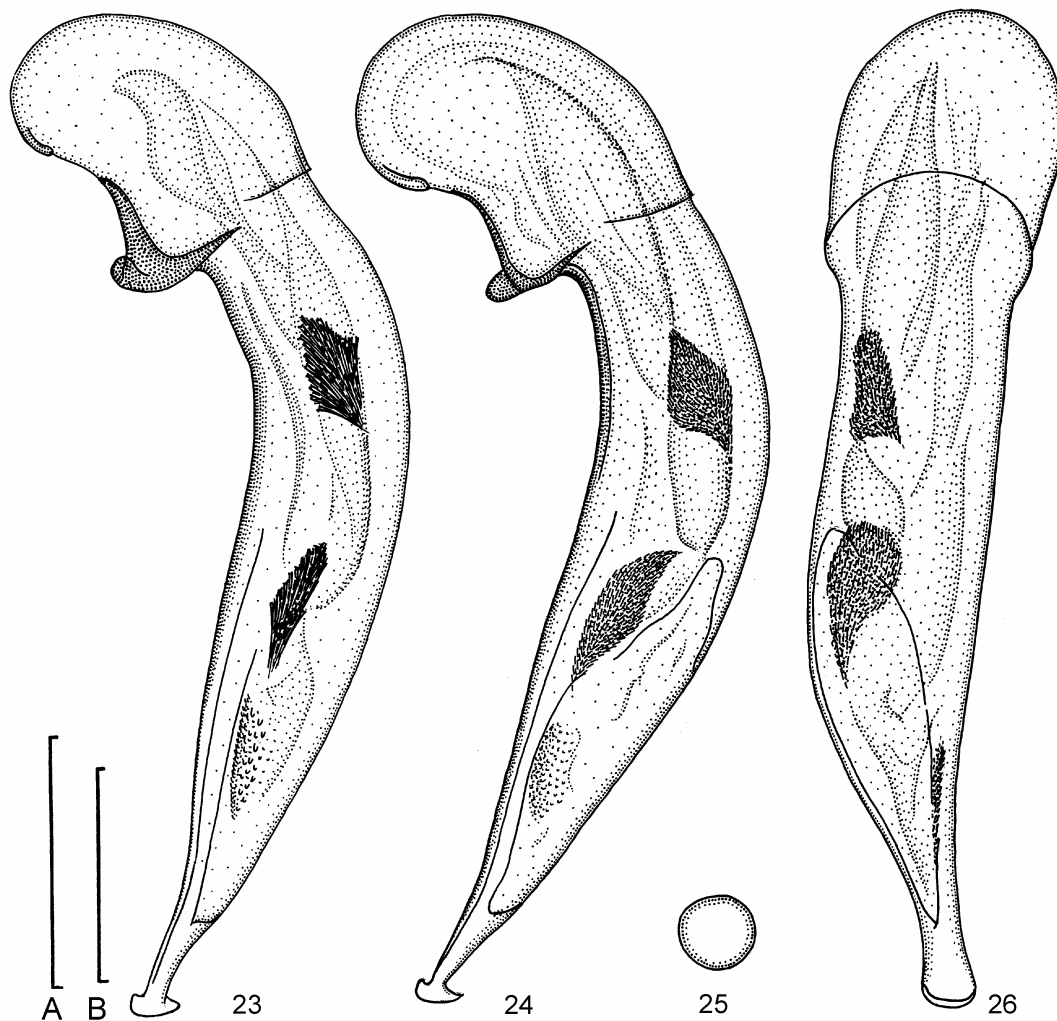


Figs 17–22. *Harpalus* Latr., median lobe of aedeagus. 17–19 – *H. medvedevi* sp. n. (Dzhulek env., paratype); 20–22 – *H. remboides* Solsky (lectotype of *H. ferghanensis* Tschitsch.). 17, 20 – dorsal aspect; 18, 21 – lateral aspect; 19, 22 – apical capitulum, view from behind. Scales: A = 1.0 mm (Figs 17, 18, 20, 21); B = 0.5 mm (Figs 19, 22).

Head of medium size, not punctured. Tooth of mentum small and obtuse. Eyes moderately convex.

Elytra rounded at sides. Humeri angulate, each with small denticle at apex. Subapical sinuation distinct, but not deep, without denticle at its base; sutural angle sharp at apex. Basal bead glabrous, slightly sinuate, meeting lateral margin at distinct obtuse angle. Striae not punctured, superficial or slightly impressed. Intervals either flat or weakly convex, particularly at apex, not punctured and nonpubescent. Basal pore present. Scutellar striola rather long. Third interval with one discal pore in apical quarter. Microsculpture distinct throughout, consisting of isodiametric meshes.

Macropterous. Metepisterna (Figs 38–44) notably narrowed posteriad, rather short, their width along anterior margin approximately equal to length along inner margin or hardly greater than it. Three last abdominal sternites largely glabrous, only with very fine, inconspicuous pubescence at base of each sternite medially. Anal sternum in both sexes rounded along apical margin, in female only hardly swollen at apex. Chaetotaxy of metacoxae not constant even within one species: each coxa either with only two (anterior and posterior) obligatory setae or with one or more additional setae variable in length and position; often additional seta present inside of obligatory anterior seta (Figs 35–37). In protibia, outer distal margin usually with four, rarely five, spines isolated from spines on ventral side of tibia and ventroapical tubercle with one spine at apex. Metafemur with 4–7 setigerous pores along hind margin and 3–7 pores along anterior margin. Tarsi dorsally glabrous. First mesotarsomere in male with adhesive vestiture ventrally. Metatarsomeres (Figs 32–34) slender, rather long, length of 1st metatarsomere about 2.5–3.2 times its apical width.

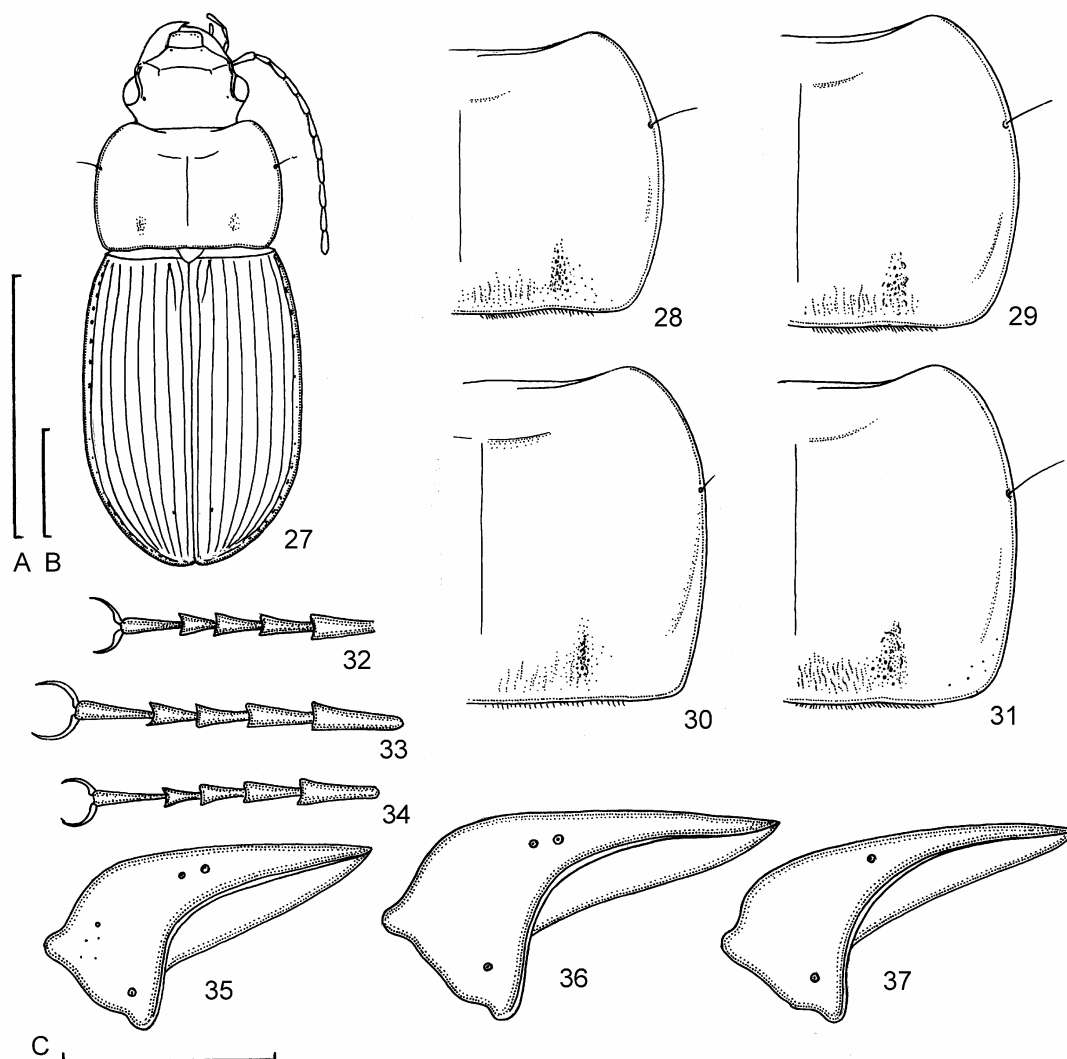


Figs 23–26. *Harpalus araraticus* Mlyn., median lobe of aedeagus (23 – topotype, Turkey; 24–26 – Armenia). 23, 24 – lateral aspect; 26 – dorsal aspect; 25 – apical capitulum, view from behind. Scales: A = 1.0 mm (Figs 23, 24, 26), B = 0.5 mm (Fig. 25).

Median lobe of aedeagus (Figs 17–26) arcuate, with comparatively large and nearly transverse apical capitulum; latter oval in view from behind (Figs 19, 22, 35). Terminal lamella moderately long, narrow, widened apically. Internal sac with two or three spiny patches, without any teeth.

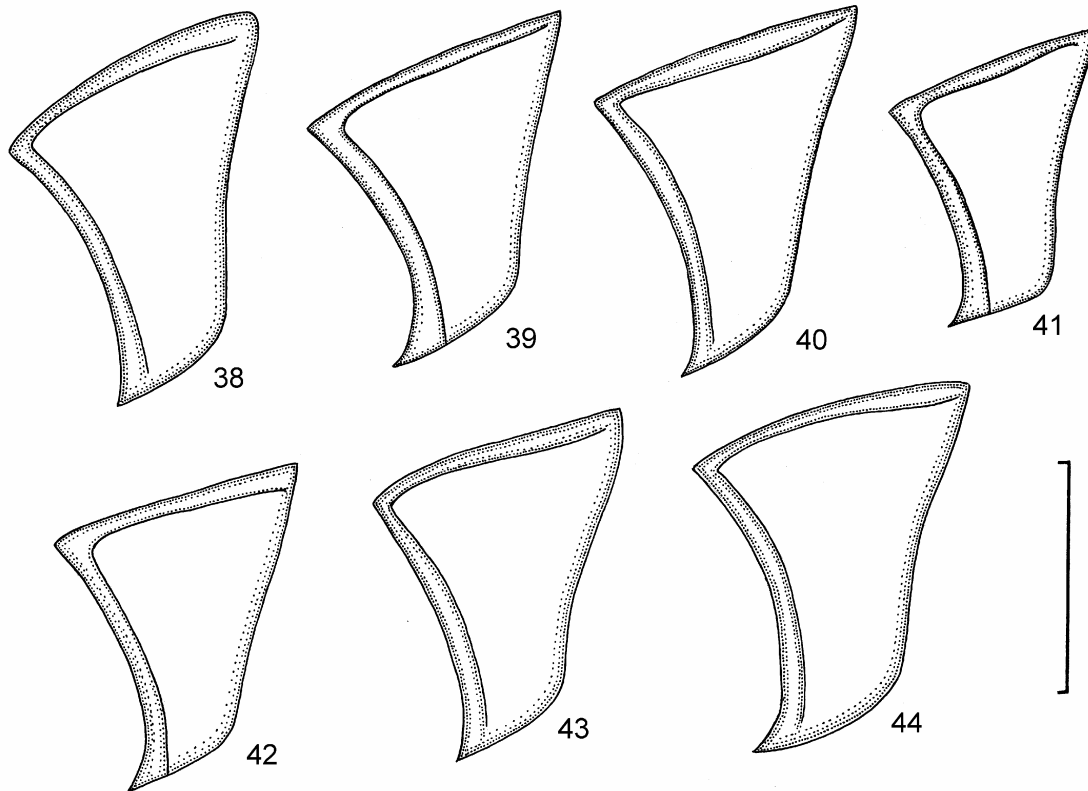
Composition and distribution. The *remboides* group includes three allopatric species: two, *H. remboides* Solsky, 1874 and *H. medvedevi* sp. n., from the desert zone of Kazakhstan and Middle Asia, and the third, *H. araraticus* Mlynář, 1979, from eastern Anatolia and southern Armenia.

Remarks. All three species of the *remboides* group have been described separately and never been compared with each other. However, they constitute a natural group, which is rather distinct in its morphological characteristics and well separated from the other species-groups of *Harpalus* by the characters listed in the diagnosis. In appearance, members of the *remboides* group are somewhat similar to the members of the *serripes* group, particularly to *H. serripes ernsti* Kataev, 1995 and *H. pseudoserripes* Reitter,



Figs 27–37. *Harpalus* Latr. 27, 28, 32 – *H. araraticus* Mlyn. (27 – topotype; 28, 32 – Armenia); 29, 34–37 – *H. medvedevi* sp. n. (Dzhulek env., paratypes); 30, 31, 33 – *H. remboides* Solsky (30 – holotype; 31 – lectotype of *H. ferghanensis* Tschitsch.; 33 – Pungan); 27 – habitus; 28–31 – right half of pronotum; 32–34 – left metatarsus; 35–37 – left metacoxa. Scales: A = 5.0 mm (Fig. 27); B = 1.0 mm (Figs 28–34); C = 1.0 mm (Figs 35–37).

1900, but clearly differ from them in the more flattened body, shorter metepisterna, and slenderer metatarsomeres. Based on the rather long metatarsomeres and the aedeagus with transverse discoidal apical capitulum, I believe that the *remboides* group belongs to the large separate phylogenetic stock (lineage) within *Harpalus* s. str., which includes also at least seven other related species-groups: the *smaragdinus*, *gisellae*, *cyanopterus*, *famelicus*, *ingenuus*, *pulvinatus*, and *cisteloides* groups (about composition of these groups, see Kryzhanovskij et al., 1995: 140–141). This phylogenetic stock, named here the *smaragdinus* stock, can be defined only polythetically, by a combination of several non-specific characters, each may be absent in some of the included taxa. Most important of these distinctive characters are: peculiar structure of aedeagus (the latter often with transverse discoidal apical capitulum), rather slender metatarsus with comparatively long first tarsomere, one spine (rarely two spines) on ventroapical tubercle of protibia, pronotum usually with ciliate basal margin, and anal sternum without pronounced sexual dimorphism. The position of the *remboides* group within the *smaragdinus* stock is uncertain. In the combination of characters, the *remboides* group is most similar to the *smaragdinus* and particularly the *gisellae* groups, which are all characterized by the glabrous basal bead of elytra and the discoidal apical capitulum of aedeagus. The *gisellae* and *remboides* groups also share the almost glabrous abdominal sternites and the short metepisterna. However, these characters may not reflect the phylogeny because they could arise independently. As for the *smaragdinus* group, it seems to be close to the ancestral group not only of the *smaragdinus* stock, but also of the genus *Harpalus* as a whole. The *smaragdinus* group shares with the Selenophori genus-group some features, such as an unusual for the Harpali genus-group dorsal position of the apical orifice of aedeagus and additional discal pores on 3rd elytral interval present in *H. smaragdinus* (Duftschmid, 1812). The Selenophori genus-group seems to be an ancestral group of the Harpali genus-group (Kataev, 1995).



Figs 38–44. *Harpalus* Latr., left metepisternum. 38–40 – *Harpalus remboides* Solsky (38 – holotype of *H. remboides*; 39 – lectotype of *H. ferghanensis* Tschitsch.; 40 – Pungan); 41 – *H. araraticus* Mlyn. (Armenia); 42–44 – *H. medvedevi* sp. n. (Dzhulek env., paratypes). Scale = 1.0 mm.

Brief mention should be made of the geographical distribution and ecology of the groups belonging to the *smaragdinus* stock. The geographical pattern of this stock is quite remarkable. The ranges of all the taxa are restricted mainly to arid and semiarid areas of the eastern part of the Tethyan (= Ancient Mediterranean) Region of the Palaearctic. Half of the included groups are endemic (the *cyanopterus*, *famelicus* and *ingenuus* groups) or subendemic (the *gisellae* group) to Tien Shan and Pamir-Alai mountains. Most of their representatives are apterous. The other half of the groups are more widely distributed across the eastern Tethyan Region and more common to the plains: the members of the *smaragdinus* and *cisteloides* groups live mainly in the steppe and the partially-wooded zones, the members of the *pulvinatus* and *rembooides* groups occur in the dry steppe and in the desert zone. Their representatives are fully winged. As far as we know, the species of the *pulvinatus* and *rembooides* groups live not far from the water, usually in the flood river zone. It is notable that the geographic ranges of the both *pulvinatus* and *rembooides* groups match very closely and are restricted to the Transcaucasus and the Transcaspiian region. Similar distribution patterns of these groups seem to be the result of the similar evolutionary history.

The species of the *rembooides* group are very similar to each other in external structures and their identification is possible in some cases only based on the characteristics of the male genitalia.

Key for determination of species

1. Aedeagus (Figs 17–19) with two very large spiny patches in internal sac. Pronotal microsculpture distinct throughout, not or only slightly obliterate in central part of pronotum. Head of female, and often also of male, with more or less distinct microsculpture on frons and vertex *H. medvedevi* sp. n.
- Aedeagus with three much smaller spiny patches in internal sac. Pronotal microsculpture distinct along base and sides, more or less strongly obliterate in central part of pronotum. Frons and vertex at most with strongly obliterate microsculpture only in female 2
2. Terminal lamella of aedeagus (Figs 20–22) longer and rather strongly widened apically. Medial spiny patch in internal sac situated in central part of median lobe. Pronotum (Figs 30, 31) less convex and less strongly rounded at sides. Body length above 11.0 mm *H. rembooides*
- Terminal lamella of aedeagus (Figs 23–26) shorter and weakly widened apically. Medial spiny patch in internal sac situated at left side of median lobe. Pronotum (Fig. 28) more convex and more strongly rounded at sides. Body length below 11.0 mm *H. araraticus*

***Harpalus rembooides* Solsky, 1874** (Figs 20–22, 30, 31, 33, 38–40, 45b)

Harpalus rembooides Solsky, 1874: 84. Type locality: “in deserto Kara-kum”.

Harpalus rhembooides auct. (unjustified emendation).

Harpalus (i. sp.) *ferghanensis* Tschitscherine, 1899: 271, **syn. n.** Type locality: “Margelan”, Ferghana Valley, Uzbekistan.

Description. Terminal lamella of median lobe of aedeagus (Figs 20–22) rather long, notably widened apically. Internal sac with three medium-sized spiny patches (basal at left side, apical at right side, and medial patch in central part of median lobe). Frons and vertex usually smooth, at most with strongly obliterate microsculpture in female. Pronotum with distinct meshes at base and along sides, smooth or with obliterate meshes in central portion; sides (Figs 30, 31) usually less strongly rounded at sides than in *H. rembooides* and *H. araraticus*. Metepisterna (Figs 38–40) rather short, their width along anterior margin usually scarcely greater than length along inner margin. Body comparatively large: length 11.6–12.3 mm in males and 12.2–12.3 mm in females.

Proportions (based upon 5 ♂ and 2 ♀): WP/LP = 1.41–1.49; LE/WE = 1.39–1.48 in male and 1.48–1.50 in female; LE/LP = 2.36–2.47 in male and 2.43–2.54 in female; WE/WP = 1.10–1.17 in male and 1.18–1.21 in female; WHmax/WP = 0.64–0.66 in male and female; WHmin/WP = 0.51–0.53 in male and 0.55–0.56 in female.

Type material. Holotype of *H. rembooides*: ♀ labelled “*Harpalus stenolophoides* n. sp. ♀” and “Капакым, спирт” [Kara Kum, alcohol] (both labels probably by Solsky; ZMM) (see Remarks below).

Lectotype (present designation) of *H. ferghanensis*: ♂ labelled “Margelan, Reitter”, “*H. ferghanensis* m. Typ. Tschitscherin det.”, “Lectotypus *Harpalus ferghanensis* Tschit., Z. Mlynář det., 1976” (ZISP). Paralectotypes. 2 ♂, 1 ♀, same data as in lectotype (ZISP; 1 ♂, TMB).

Other material. Uzbekistan. 1 ♂, Namangan Prov., Syr-Darya River, Pungan, 20 VI 2001, O. Legezin leg. (cIKAB). Turkmenistan. 1 ♂, “Turcmenien, Leder, Reitter” (TMB).

Distribution (Fig. 45b). Known only from a few specimens collected in Ferghana Valley, Uzbekistan, and in “Karakum”, probably Turkmenistan.

Remarks. This rare species was hitherto known as *H. ferghanensis* since the name “*remboides*” was erroneously attributed to the more common species from Kazakhstan and China (Sharova, 1981; Kryzhanovskij et al., 1995; Kataev et al., 2003), which is newly described below. In fact, the names “*ferghanensis*” and “*remboides*” should be treated as synonyms. *H. remboides* was described by Solsky (1874) from a single female taken “in deserto Kara-kum” without comparison with any known species, and the type specimen has probably never been re-examined. Unfortunately, an effort to identify the type meets difficulties. There is no any specimen labelled by S. Solsky as “*Harpalus remboides*” neither in ZISP nor in ZMM where parts of his collections are kept now. However, amongst the material collected by the expedition of A.P. Fedchenko in Turkestan (ZMM), determined by S. Solsky, I found a female with his labels “*Harpalus stenolophoides* n. sp. ♀” and “Karakum, alcohol”, characteristics of which fully agree with the original description of *H. remboides*. As *H. remboides* is the single species of the carabids described by S. Solsky from Karakum and he has never described any species with the name “*H. stenolophoides*”, I believe the female with this identification label to be the holotype of *H. remboides*. Based on this specimen, I consider *H. remboides* conspecific with *H. ferghanensis*, which was described by Tschitschérine (1899) in more recent time from the series collected in “Margelan”, Ferghana Valley. *H. remboides* apparently was unknown to T. Tschitschérine, because in the original description he compared his species only with *H. serripes* Quensel, 1806, but noted that the new species is rather separated from the latter and other Middle Asian species of *Harpalus*. Although the holotype of *H. remboides* is a female, its characteristics (body length 12.2 mm, weakly rounded pronotal sides, smooth frons and vertex, and rather strongly obliterate microsculpture in the central portion of pronotum) more closely correspond to those of *H. ferghanensis* than to the species distributed in Kazakhstan and China and described herein as new to science. It is significant that all the males examined from Fergana Valley are indistinguishable by the genitalia characters from the single male from Turkmenistan known to me and therefore belong to the same species.

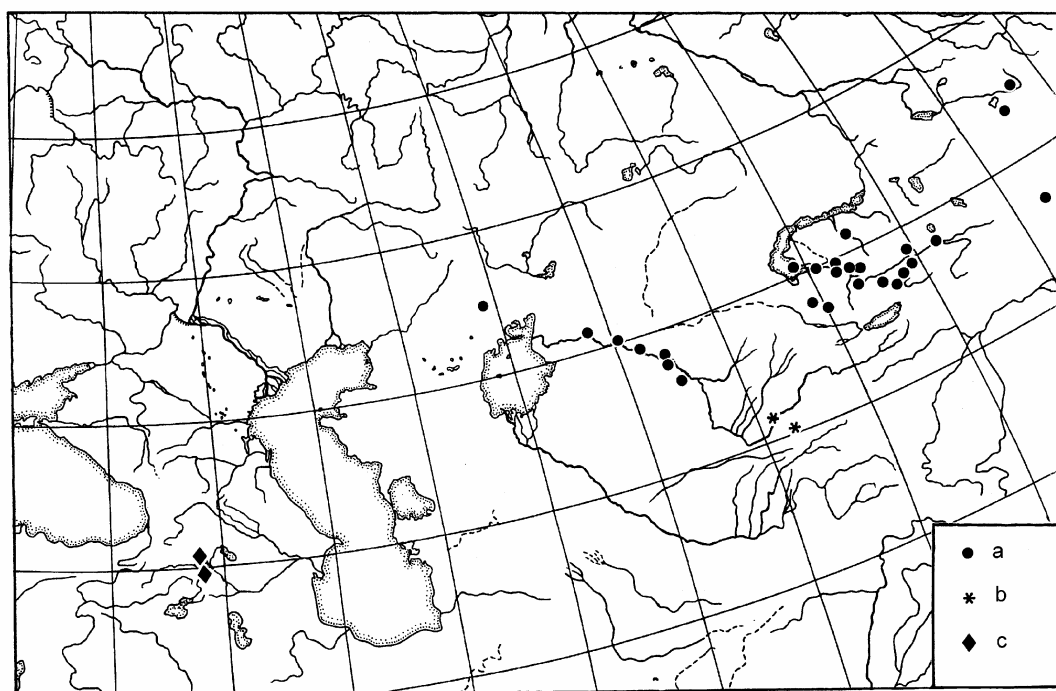


Fig. 45. *Harpalus* Latr., distribution. a – *H. medvedevi* sp. n.; b – *H. remboides* Solsky; c – *H. araticus* Mlyn.

***Harpalus medvedevi* Kataev, sp. n.** (Figs 17–19, 29, 34–37, 42–44, 45a)

Harpalus remboides auct. (non Solsky, 1874).

Description. Terminal lamella of median lobe of aedeagus (Figs 17–19) rather long, notably widened apically. Internal sac with two very large spiny patches (basal at left side and apical at right side). Frons and vertex of female, and often also of male, with more or less distinct microsculpture. Pronotum with distinct microsculpture not or only slightly obliterate in central portion. Pronotal sides usually rather strongly rounded (Fig. 29). Width of metepisterna along anterior margin in most cases approximately equal to their length along inner margin (Figs 42–44). Body, on average, smaller than in *H. remboides*: length 9.3–12.1 mm in male and 10.5–12.6 mm in female.

Proportions (based upon 6 ♂ and 6 ♀): WP/LP = 1.44–1.54; LE/WE = 1.42–1.51 in male and 1.41–1.47 in female; LE/LP = 2.41–2.61 in male and 2.39–2.53 in female; WE/WP = 1.12–1.17 in male and 1.13–1.21 in female; WHmax/WP = 0.61–0.64 in male and 0.63–0.64 in female; WHmin/WP = 0.49–0.51 in male and 0.52–0.55 in female.

Type material. Holotype: ♂, Kazakhstan, “окр. Джулека, Сыр-Дарьинская обл., В. Кожанчиков, 24.VII.910” [Dzhulek env., Syr-Darya Prov., 24 VII 1910, V. Kozhanchikov leg.] (ZISP). Paratypes. Kazakhstan. 1 ♀, Guryev Prov., Saraichik env., 2 km of flood-land margin, saline meadow, 24 VI 1954, L. Arnoldi leg. (ZISP); 1 ♀, Dzhulek, 30 V 1898, Geyer leg. (ZISP); 1 ♂, same locality, 1 VII 1910, V. Kozhanchikov leg. (ZISP); 11 ♂, 3 ♀, same data as in holotype (ZISP); 4 ♂, 1 ♀, same data but 2 VIII 1910 (ZISP); 7 ♂, 3 ♀, same data but 3 VIII 1910 (ZISP); 1 ♂, “11 VIII 1910, V. Kozhanchikov” (ZISP); 1 ♀, “Syr-Darya, Kozhanchikov” (cWR); 1 ♂, Dzhulek env., Dzhuvan-Tyube, 13 VII 1907, D. Glazunov leg. (ZISP); 1 ♂, Baygakum near Dzhulek, 27 VI 1907, collector unknown (ZISP); 1 ♂, Chiili, Gigant, 5 V 1971, collector unknown (ZISP); 1 ♀, Andzhar-Maylibash, Kazalinsk u[ezd], 17 VI 1898, Geyer leg. (ZISP); 1 ♂, 1 ♀, Kara-Uzyak, Perovsk u[ezd], 3 and 19 VI 1916, N. Pulikovskaya leg. (ZISP); 1 ♀, Syr-Darya River, Lun[?]gar Vill., 10 IV 1986, S. Ovchinnikov leg. (cIKAB); 1 ♀, left bank of Syr-Darya River near Turkestan City, 6 VI 1983, G. Nikolaev leg. (cIKAB); 2 ♂, 1 ♀, 40 km SW of Turkestan City, left bank of Syr-Darya River, Baltakol, 4 V 1994, V. Gusarov leg. (ZISP); 1 ♂, 1 ♀, Ili River near Karagach, 31 V 1992, S. Murzin leg. (cIKAB); 1 ♀, same locality, VI–VII 1993, A. Saldajits leg. (cIKAB); 1 ♂, 1 ♀, Ili River near Bakanas, 2 VII 1989, E. Ishkov leg. (cIKAB); 1 ♂, right bank of Ili River, 4 km upstream of Bakanas, 6 VI 1989, E. Ishkov leg. (cIKAB); 1 ♂, Ili River, Araltobe, 60 km N of Bakanas, 31 V 1990, R. Predel leg. (cWR); 1 ♂, 1 ♀, Ili fl., Uszsarma, 29–30 V 1991, Beneš leg. (cWR); 1 ♀, Anrakay, upstream of Almaly-say River, 10–14 V 1909, Nedzvetskiy leg. (ZISP); 1 ♀, Kurdayskaya Station, 900 m, 7 VIII 1907, A. Jacobson leg. (ZISP); 1 ♀, Kurtinskiy Distr., Zhelturanga env., left bank of Topar River, saline land, 19 V 1984, R. Kadyrbekov leg. (cIKAB); 2 ♂, 20 km NNW of Zhalanash, Naryn valley, 27 V 1988, G. Medvedev leg. (ZISP); 1 ♂, 1 ♀, 20 km NE of Zhalanash, Charyn valley, 28 V 1988, S. Andreeva leg. (ZISP); 1 ♀, Karatal River, 25 km N of Ushtobe, tugay [floodland forest], 20 VI 1992, E. Ishkov leg. (ZISP); 1 ♂, Charyn, W of Chundzha, tugay, 9 VI 1983, G. Medvedev leg. (ZISP); 1 ♂, same data but 800 m, 10–13 VI 1993, W. Schawaller leg. (cWR); 1 ♂, Dzharkent env., 17 VI 1992, Dr. Beneš leg. (cWR); 1 ♂, Tashkarasu, SW of Panfilov, 11 VI 1983, G. Medvedev leg. (ZISP). China. Xinjiang: 1 ♂, Kuldzha (= Gulja, = Yining), 1879, A. Regel leg. (ZISP); 1 ♀, between Santakhu and Tsinishuan, 19 VIII 1898, E. Klementz leg. (ZISP); 1 ♀, Fuhai County, 500 m, 21 VII 1960, Zhang Facai leg. (IZB); 1 ♀, Fuyun County, 850 m, 16 VII 1960, Wang Shuyong leg. (IZB).

Additional material (examined previously and not included in the type series). About 20 specimens from the following localities (all in Kazakhstan): Aktyubinsk Prov., Chelkar, 1977, I. Belousov leg. (cBEL); Kzyl-Orda Prov., Chiili, 4, 5 and 12 V 1971 (cIKAB); Ili River, env. of Karaturanga, 20 VI 1971 (cIKAB); Ili River, 10 km downstream of Ulkun-Kalkan Mts., 10 VI 1971 (cIKAB); Ili River, Kapchagai, at light (cIKAB); Karatal River, 25 km N of Ushtobe, tugay [floodland forest] (cIKAB); Alma-Ata Prov., Tasmurunskiy Canal (cIKAB); Chilik, 17 VI 1971 (cIKAB); Araltobe, 60 km N of Bakanas (cWR); Mts. Archali (cJEAN); “Dsulpash” (ex coll. Ballion: ZMO).

Distribution (Fig. 45a). Plains of Kazakhstan and western China (Xinjiang).

Etymology. This new species is named for G.S. Medvedev, to whom this volume is dedicated.

Remarks. Very similar in external characters to *H. remboides* but well differs from it in the aedeagus with two very large spiny patches in the internal sac. In addition, the body of the new species is, on the average, a little smaller than in *H. remboides*, pronotal sides usually more strongly rounded, and microsculpture on pronotal disc and head is more developed.

***Harpalus araraticus* Mlynář, 1979** (Figs 23–28, 32, 41, 45c)

Harpalus araraticus Mlynář, 1979: 88. Type locality: “Anatolia or., Dogu Bayazit, 1700 m”, south of Ararat Mountain, Turkey.

Description. Terminal lamella of median lobe of aedeagus (Figs 23–26) weakly widened apically and a little shorter than in other species. Internal sac with three medium-sized spiny patches (basal and medial patches at left side and apical patch at right side of median lobe). Frons and vertex smooth, without microsculpture. Microsculpture on pronotum very fine, consisting of more or less isodiametric and weakly transverse meshes, more distinct along base and sides, obliterate in cen-

tral portion of pronotal disc. Pronotal sides rather strongly rounded (Figs 27, 28). Width of metepisterna along anterior margin approximately equal to their length along inner margin (Fig. 41). First metatarsomere (Fig. 32) slightly shorter than in *H. remboides* (Fig. 33) and *H. medvedevi* sp. n. (Fig. 34), about two and half times as long as wide at apex. Body length in male 9.7–9.8 mm (according to the original description, 10.0–12.0 mm).

Proportions (based on 2 ♂): WP/LP = 1.51–1.55; LE/WE = 1.40–1.41; LE/LP = 2.34–2.47; WE/WP = 1.11–1.13; WHmax/WP = 0.63–0.64; WHmin/WP = 0.52.

Material. Turkey. 1 ♂, “Anatolia or., Heinz leg.”, “Dogubayazit, 22.VIII.67, 1700 m”, “ex seria typica”, “*Harpalus araraticus* Mlyn. Heinz det.” (cWR). Armenia. 1 ♂, Aygerlich, 13 VIII 1976, T. Vásárhelyi leg. (TMB).

Distribution (Fig. 45c). Northeastern Turkey (Ağrı Prov.) and southern Armenia.

Remarks. This species was originally described from the series collected in Doğubayazit, North-eastern Turkey, to the south of Ararat Mountain and recently was recorded from Armenia (Kataev, 2002). In the original description, Mlynář (1979) compared his species with the European *H. tardus* (Panzer, 1797), but noted that *H. araraticus* is more closely related to *H. amator* Reitter, 1900 (= *H. compressus* Motschulsky, 1844). In fact, based on both external characters and male genitalia, *H. araraticus* should be included in the *remboides* group. Interestingly, the species from Anatolia and Armenia seems to be more closely related to *H. remboides* distributed in Uzbekistan and Turkmenistan than to *H. medvedevi* sp. n. distributed in Kazakhstan and China. Both *H. araraticus* and *H. remboides* possess three spiny patches in internal sac of aedeagus and highly reduced microsculpture on the head and pronotum. However, *H. araraticus* is more similar to *H. medvedevi* sp. n. in appearance having more rounded sides of pronotum.

The *ingenuus* group

Diagnosis. Comparatively large or medium-sized beetles; pronotum rounded at sides, with widely rounded basal angles and ciliate basal edge, not punctured (at most with few fine punctures in somewhat small and deep basal foveae); elytra punctured and pubescent basally and often laterally, with pubescent basal bead, without basal pore and any discal pores; preapical sinuation of elytra deep, with denticle at its base; metepisterna wider than long; abdominal sternites with long additional setae; anal sternum without pronounced sexual dimorphism; ventroapical tubercle of protibia with two spines at apex; mesotibia of male without tubercle on its inner surface; metatarsus slender, with comparatively long 1st metatarsomere; terminal lamella of aedeagus long, with oblique or transverse apical capitulum (triangular, view from behind: Figs 60, 64, 67, 70); internal sac with two large teeth and two or three spiny patches, latter sometimes fused into single large spiny formation.

Description. Body black or dark brown, sometimes with green or blue hue on dorsum; palpi and antennae dark brown to black, often with 1st antennomere much paler, reddish brown; legs dark brown to black, tarsi usually slightly paler than femora and tibiae.

Head of medium size, not punctured. Mentum with or without medial tooth. Eyes moderately convex. Microsculpture on frons and vertex absent or obliterate; fine isodiametric meshes visible usually only inside of and behind eyes.

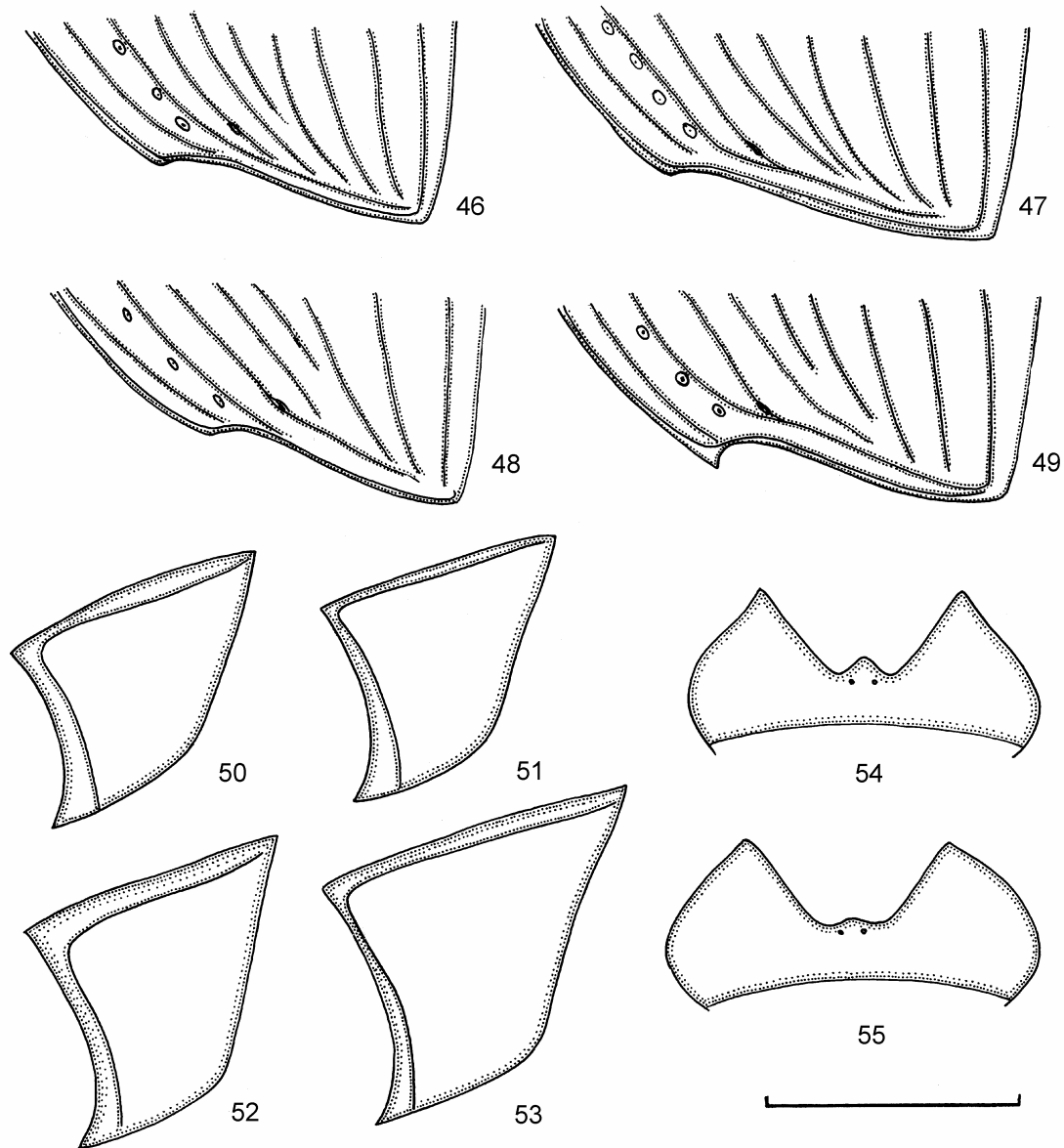
Pronotum (Figs 56, 57) rather convex, usually not depressed at base, widest just before middle, with unisetose, evenly rounded sides. Apical margin arcuately emarginate, basal one concave medially and rounded laterally. Apical angles more or less protruding, narrowly rounded at apex. Base of pronotum slightly wider than apex and slightly narrower than elytral base between humeral angles; basal pronotal edge ciliate. Basal angles widely rounded at apex. Lateral depressions usually not developed and area at basal angles convex (rarely slightly depressed). Basal foveae very small, narrow, either deep or shallow, often separated from pronotal basal margin. Pronotal surface with at most a few fine punctures inside of basal foveae and along sides. Dorsal microsculpture consisting of more or less isodiametric meshes, visible throughout or restricted to marginal areas.

Elytra convex, rounded at sides. Humeri angulate, each with small or medium-sized denticle at apex. Subapical sinuation rather deep, with denticle at its base; in female sinuation usually deeper and denticle larger (Fig. 47, 49) than in male (Figs 46, 48). Sutural angle nearly rectangular, sharp at apex. Basal bead setaceous, sinuate, meeting lateral margin at distinct obtuse angle. Striae not punctured, slightly impressed or superficial. Intervals slightly convex. Elytral surface covered with fine puncturation and pubescence in narrow basal area and often also at apex and along sides; puncturation more distinct in male than in female. Basal and discal pores absent. Scutellar striola rather long. Microsculpture visible throughout, isodiametric, fine in males and granulate in females.

Apterous. Prosternum finely punctured apically and laterally. Metepisterna (Figs 50–53) broad, weakly narrowed posteriorly, their width along anterior margin greater than length along inner margin. Abdominal sternites, in addition to obligatory fixed setae, with numerous, irregularly distributed, rather long additional setae. Anal sternum in both sexes rounded along apical margin, in female only hardly swollen at apex. Metacoxae with several additional setae medially.

In protibia, outer distal margin usually with three or four spines isolated from spines on ventral side of tibia, and ventroapical tubercle with two spines at apex. Mesotibia of male without tubercle on inner surface. Metafemur with 9–14 setigerous pores along hind margin and 5–8 pores along anterior margin. Tarsi dorsally glabrous. First mesotarsomere in male with adhesive vestiture ventrally. Metatarsomeres slender, 1st tarsomere about 2.3–2.6 times as long as wide at apex.

Median lobe of aedeagus weakly arcuate, with transverse or oblique apical capitulum; latter triangular in view from behind. Terminal lamella moderately long, narrow, rather strongly widened apically. Internal sac with two large teeth and two or three spiny patches.



Figs 46–55. *Harpalus* Latr. 46, 47, 52 – *H. ingenuus lailakensis* ssp. n. (paratypes); 48–50, 54 – *H. i. ingenuus* Tschitsch. (48 – Shakhimardan; 49, 50, 54 – Ak-Suu); 51 – *H. i. alajanicus* Tschitsch. (Isfayramsay); 53, 55 – *H. arcuatus* Jedl. (10 km S of Tajikabad). 46–49 – apex of left elytron (46, 48 – male, 47, 49 – female); 50–53 – left metepisternum; 54, 55 – mentum. Scale = 1.0 mm.

Composition and distribution. The group includes two vicariant species from the Pamir-Alai region of Middle Asia: *H. ingenuus* forming three subspecies along northern slopes of Turkestan and Alai Mountain Ranges, and *H. arcuatus* known from the northern slopes of Peter-the-Great Mountain Range. Both species occur in the semiarid areas at elevation of 2000–3700 m.

Remarks. Similarly to the *remboides* group, the *ingenuus* group also belongs to the *smaragdinus* phylogenetic stock described above (see Remarks for the *remboides* group). The *ingenuus* group agrees with the other members of this stock in many external characteristics, shape of the median lobe of aedeagus and details of the internal sac, but in habitus and presence of two ventroapical spines on protibia it reminds members of the *affinis* phylogenetic stock (Kataev, 1987). In contrast to the members of the *affinis* stock, the species of the *ingenuus* group are characterized by the anal sternum without pronounced sexual dimorphism and the male mesotibia lacking a tubercle on its inner surface. It will be noted also that the sclerotized elements in the internal sac of aedeagus in the *affinis* stock demonstrate pattern much different from that in the *ingenuus* group and as a rule include no separate large teeth.

Amongst the members of the *smaragdinus* stock, the *ingenuus* group is similar to the *famelicus* and *pulvinatus* groups in having the basal bead of elytra densely punctured and pubescent, but well differs from the both in having the protibia with two ventroapical spines and the aedeagus with two large teeth in the internal sac (both the *famelicus* and *pulvinatus* groups as well as majority of other taxa of the *smaragdinus* stock have aedeagus with at most one large separate tooth in the internal sac). Species of the *ingenuus* group are recognizable also by their elytra, which are finely punctured and pubescent on external intervals and lack basal (parascutellar) and any discal pores.

Key for determination of species and subspecies

1. Mentum without median tooth or latter very small and broad (Fig. 55). Metafemur usually with at least nine (rarely eight) setigerous pores along hind margin. Medial and apical spiny patches in internal sac of aedeagus united in a single formation with very large spines in its basal portion (Figs 68–70); rarely apical spiny patch separated from combined medial patches *H. arcuatus*
- Mentum with more or less prominent median tooth (Fig. 54). Metafemur usually with five to seven (rarely eight or nine) setigerous pores along hind margin. Internal sac of aedeagus with three or two separate spiny patches: two medial patches (usually fused apically) and one apical patch (sometimes strongly reduced or absent) *H. ingenuus* (2)
2. Four to six external intervals of elytra distinctly punctured and pubescent *H. ingenuus alajanicus*
- At most two or three external intervals of elytra punctured and pubescent; puncturation and pubescence very fine, often hardly visible 3
3. Apical capitulum of aedeagus (Figs 58–60) clearly oblique, with apex directed posteriad; internal sac with basal tooth much larger than apical one *H. ingenuus lailakensis* ssp. n.
- Apical capitulum of aedeagus (Figs 61–64) nearly transverse, with apex directed anteriad; internal sac with basal tooth much smaller than apical one *H. ingenuus ingenuus*

***Harpalus ingenuus* Tschitschérine, 1898**

Harpalus ingenuus Tschitschérine, 1898: 179.

Diagnosis. Mentum with more or less prominent median tooth (Fig. 54). Metafemur usually with 5–7 (rarely eight or nine) setigerous pores along hind margin. Internal sac of aedeagus (Figs 58–67) with three or two separate spiny patches: two medial patches (usually fused apically) and one apical patch (sometimes strongly reduced or absent).

Remarks. The species is variable geographically and consists of three distinct geographical forms treated here as subspecies. However, morphological differences between them are remarkable and constant, include characteristics of male genitalia, and it is possible that each of these forms represents actually a distinct species.

***Harpalus ingenuus ingenuus* Tschitschérine, 1898** (Figs 48–50, 54, 61–64, 71b)

Harpalus ingenuus Tschitschérine, 1898: 179. Type locality: “montagnes d'Alaj” near Shakhimardan, Kirghizia.

Description. Pronotum usually convex at basal angles, with very small oval basal foveae isolated by convexities from basal margin (rarely, mainly in females, foveae longer and touching basal margin). Elytra punctured and pubescent on two or three external intervals and at apex; puncturation and pubescence very fine, often hardly visible particularly in females. Microsculpture on frons and vertex usually absent in males and obliterate but recognizable in females, meshes in central part of pronotal disc visible mostly in females. Apical capitulum of median lobe of aedeagus (Figs 61–64) nearly transverse, with apex directed anteriorly; terminal lamella slightly concave ventrally; basal tooth in internal sac much smaller than apical one; right apical spiny patch well developed.

Proportions (based upon 8 ♂ and 8 ♀): WP/LP = 1.49–1.59; LE/WE = 1.41–1.47 in male and 1.34–1.43 in female; LE/LP = 2.54–2.68 in male and 2.51–2.67 in female; WE/WP = 1.15–1.22 in male and 1.21–1.27 in female; WHmax/WP = 0.68–0.71 in male and female; WHmin/WP = 0.56–0.59 in male and 0.59–0.62 in female.

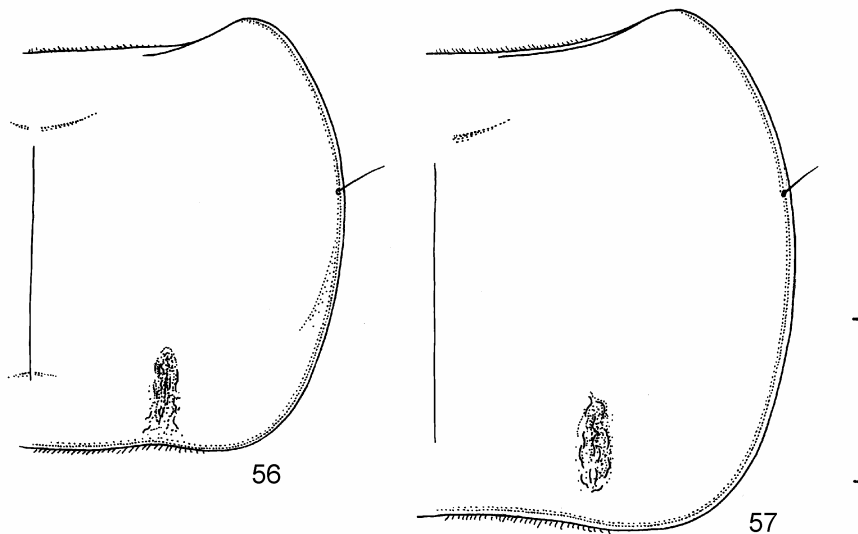
Body size: length 9.1–11.2 mm in male and 9.3–11.3 mm in female; width 3.7–4.8 mm in male and 4.0–5.1 mm in female.

Type material. Lectotype (present designation): ♂ labelled “Alai-G.[ebiet] Schahimard[an] 6300”, “*Harp. ingenuus* m., typ, Tschitscherin det.”, “Lectotypus, *Harpalus ingenuus* Tschit., Z. Mlynář det., 1976” (ZISP).

Other material. Kirghizia. Alai Mountain Range: 25 ♂, 7 ♀, upper Ak-Suu River, ca 30 km from Jordan, near Kara-Kazyk Pass, 2200–2700 m, 21–22 V 1983, B. Kataev leg. (ZISP; cWR); 1 ♂, “Kara-Kasyk, Alai” [determined by E. Schaubberger as “*H. pullatus* Schaubberger”, latter never been described] (OÖLL); 1 ♂, N slope of Alai Mountain Range, 3 km SSE of Shivali Pass, 3000 m, 17 VII 1996, I. Kabak leg. (cIKAB); 1 ♂, 4 ♀, 5 km W of Shivali Pass, Western Shivali River, 24 V 1983, B. Kataev leg. (ZISP); 1 ♀, 10 km W of Shivali Pass, Western Shivali River, 26 V 1983, B. Kataev leg. (ZISP); 3 ♀, Gavian River, 15 km from Khaydarkan, ca 3000 m, subalpine zone, 28 V 1983, B. Kataev leg. (ZISP); 3 ♂, N foothills of Alai Mountain Range, Katran-Too Mountains, S of Sovetskiy Vill., 3000 m, 20 V 1994, I. Kabak leg. (ZISP; cIKAB; cBEL); 1 ♀, “Alai-Geb., Utsch-Kurgan” (ZISP).

Distribution (Fig. 71b). Northern slopes of western portion of Alai Mountain Range from Khaidarkan to Shakhimardan, southern Kirghizia.

Remarks. *H. ingenuus* was described from several males collected by F. Hauser in “montagnes d'Alaj” without more detailed information. According to the geographical label of the lectotype, they were collected not far from Shakhimardan.



Figs 56, 57. *Harpalus* Latr., right half of pronotum. 56 – *H. ingenuus lailakensis* ssp. n. (holotype), 57 – *H. arcuatus* Tschitsch. (Ganishou). Scale = 1.0 mm.

***Harpalus ingenuus alajanicus* Jedlička, 1957, stat. n. (Figs 51, 65–67, 71c)**

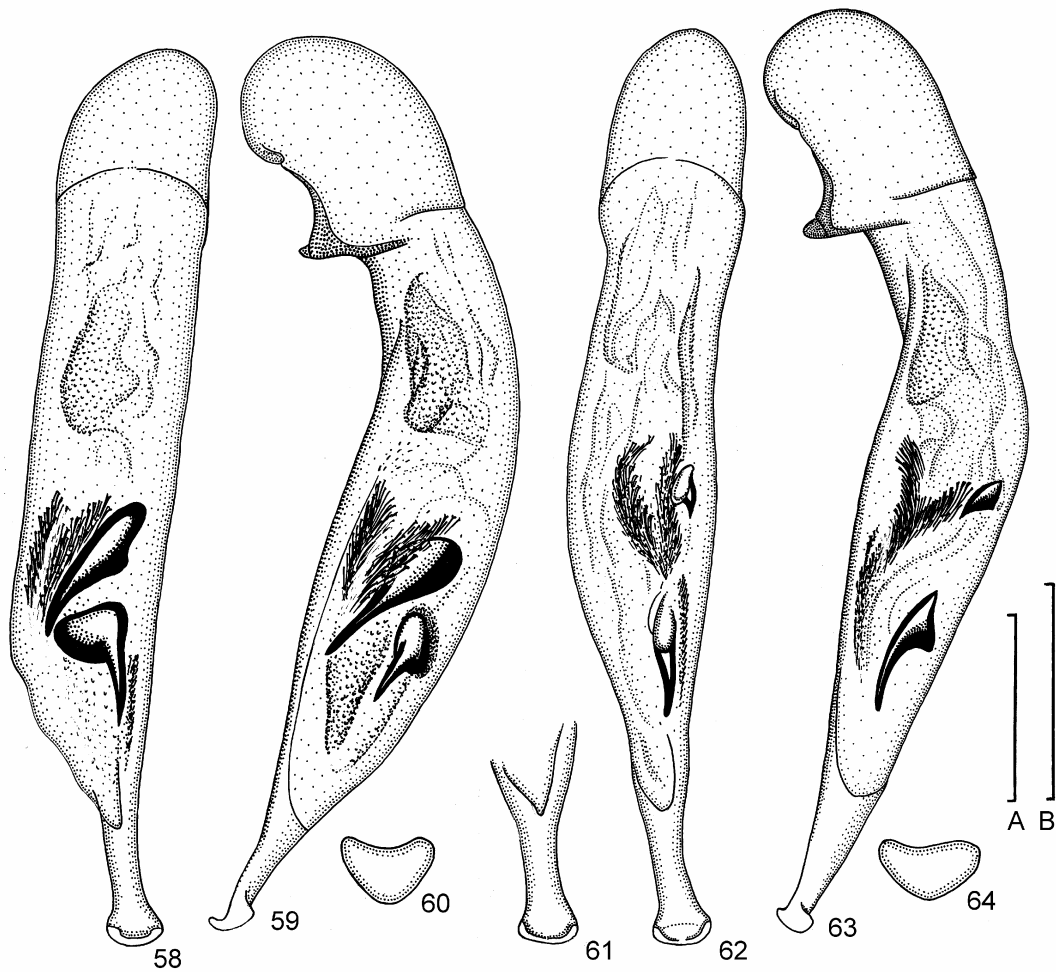
Harpalus alajanicus Jedlička, 1957: 103. Type locality: "Alaj: Isparjan [= Isfayramsay]", Kirghizia.

Description. Dorsum black in female and with green lustre in holotype and both non-type males examined. Pronotum usually convex at basal angles and with very small oval basal foveae isolated from basal margin by convexities. Elytra with 4–6 external intervals and apex distinctly punctured and pubescent; puncturation coarser than that in other subspecies. Microsculpture on frons, vertex and central part of pronotal disc obliterate. Apical capitulum of median lobe of aedeagus (Figs 65–67) weakly oblique, with apex slightly inclined posteriad; terminal lamella slightly concave ventrally; basal tooth in internal sac much smaller than apical one; right apical spiny patch reduced.

Proportions (based upon 2 ♂ and 1 ♀): WP/LP = 1.50–1.53; LE/WE = 1.44 in male and 1.38 in female; LE/LP = 2.48–2.60 in male and 2.64 in female; WE/WP = 1.15–1.18 in male and 1.25 in female; WHmax/WP = 0.71–0.72 in male and 0.73 in female; WHmin/WP = 0.59–0.60 in male and 0.62 in female.

Body size: length 10.3–10.8 mm in male and 11.5 mm in female; width 4.3–4.5 mm in male and 5.1 mm in female.

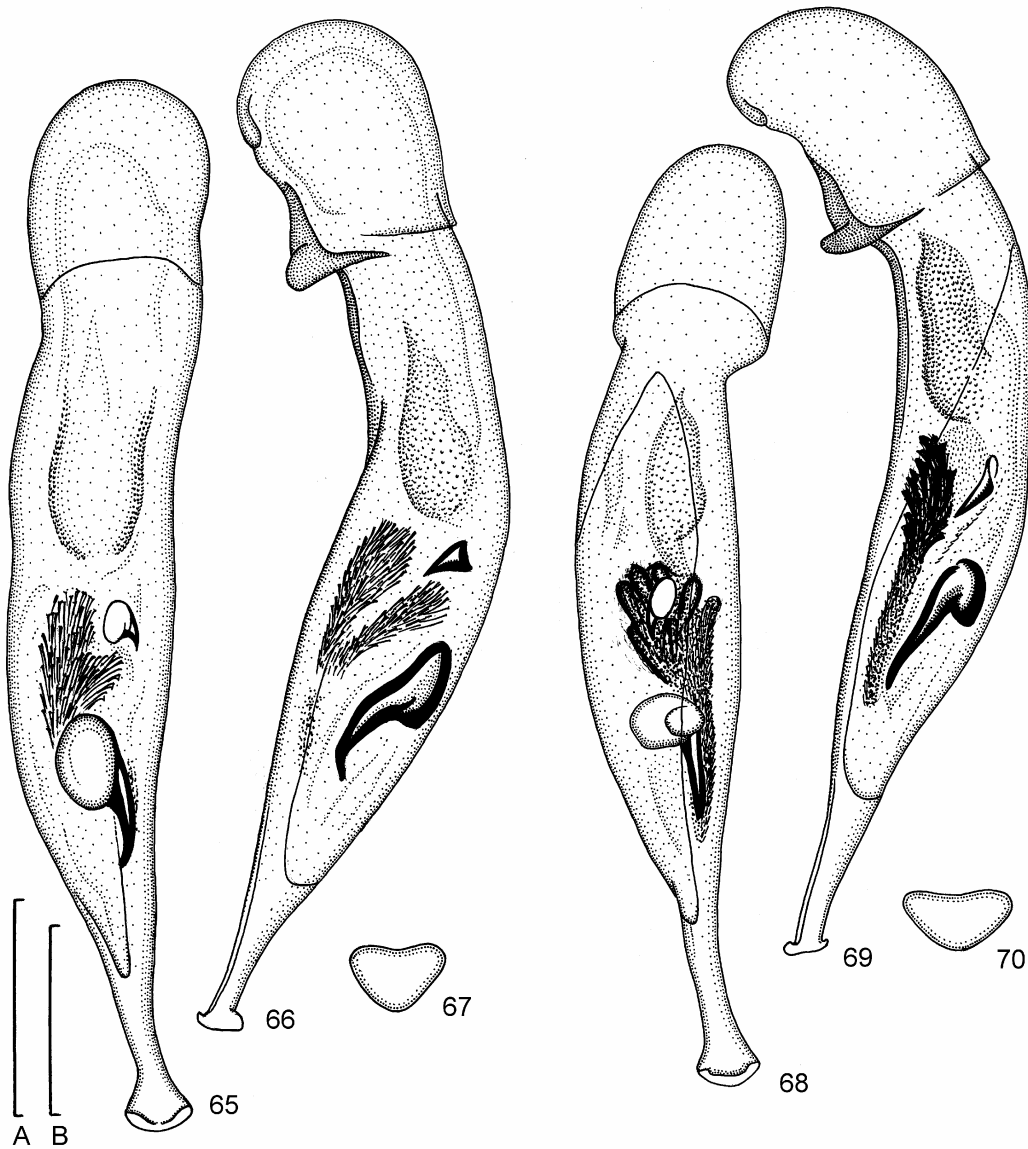
Material. Kirghizia. 2 ♂, "Isparjan [= Isfayramsay], Alai" [determined by E. Schaubberger as "*H. ispajranus* Schaubberger"; latter taxon never been described] (OÖLL); 1 ♀, "Alai", labelled also "♀, *H. alajanicus* Jedl. (cum Typo comp.) = *ingenuus* Tschit., var. = ? ssp., Z. Mlynář det., 1976" (ZISP).



Figs 58–64. *Harpalus* Latr., median lobe of aedeagus. 58–60 – *H. ingenuus lailakensis* ssp. n. (paratype); 61–64 – *H. i. ingenuus* Tschitsch. (61 – lectotype, 62–64 – Ak-Suu). 58, 62 – dorsal aspect; 59, 63 – lateral aspect; 60, 64 – apical capitulum, view from behind; 61 – terminal lamella, dorsal aspect. Scales: A = 0.5 mm (Figs 60, 64); B = 1.0 mm (Figs 58, 59, 61, 63).

Distribution (Fig. 71c). Known only from the Isfayramsay Valley to the west of Kichik-Alai on the northern slopes of central portion of Alai Mountain Range, southern Kirghizia.

Remarks. This taxon, described originally as a separate species, was treated by me (Kataev in Kryzhanovskij et al., 1995: 146) as conspecific with *H. ingenuus* because by that time I had examined only a single female compared with the type of *H. alajanicus* by Z. Mlynář. However, the distinctive characters of this taxon are sufficient to regard it at least as a separate subspecies. It is easily distinguished from the other subspecies and from *H. arcuatus* by the elytra with more distinct and more widely distributed puncturation.



Figs 65–70. *Harpalus* Latr., median lobe of aedeagus. 65–67 – *H. ingenuus alajanicus* Jedl. (Isfayramsay); 68–70 – *H. arcuatus* Tschitsch. (10 km S of Tajikabad). 65, 68 – dorsal aspect; 66, 69 – lateral aspect; 67, 70 – apical capitulum, view from behind. Scales: A = 1.0 mm (Figs 65, 66, 68, 69); B = 0.5 mm (Figs 67, 70).

***Harpalus ingenuus lailakensis* Kataev, ssp. n.** (Figs 46, 47, 52, 56, 58–60, 71a)

Description. Comparatively slender form with narrow pronotum and long elytra. Pronotum usually slightly flattened at basal angles and with basal foveae touching basal pronotal margin (Fig. 56). Elytra punctured and pubescent on two or three external intervals; puncturation and pubescence very fine, often hardly visible particularly in females; inner intervals at apex usually not punctured in females and with very few, hardly visible punctures in males. Microsculpture on frons and vertex usually absent in males and obliterate but recognizable in females, meshes in central part of pronotal disc visible mostly only in females. Apical capitulum of median lobe of aedeagus (Figs 58–60) clearly oblique, with apex directed posteriorly; terminal lamella slightly convex ventrally; in internal sac basal tooth much larger than apical one, right apical spiny patch well developed.

Proportions (based upon 5 ♂ and 4 ♀): WP/LP = 1.48–1.55; LE/WE = 1.45–1.50 in male and 1.43–1.48 in females; LE/LP = 2.60–2.71 in males and 2.65–2.80 in females; WE/WP = 1.19–1.21 in male and 1.23–1.27 in female; WHmax/WP = 0.69–0.73 in male and 0.69–0.79 in female; WHmin/WP = 0.56–0.60 in male and 0.59–0.62 in female.

Body size: length 10.6–11.0 mm in male and 10.4–11.1 mm in female; width 4.4–4.6 mm in male and 4.3–4.5 mm in female.

Type material. Holotype: ♂, Kirghizia, Osh Prov., Lailak Distr., Turkestan Mountain Range, Lailak – Birksu River side, 2700 m, VI 1996, A. Puchkov leg. (cWR). Paratypes. Kirghizia. 4 ♂, same data as holotype (cWR; ZISP); 1 ♀, N slope of Turkestan Mountain Range, Andychektau, 15 km S of Ravat, 16–17 VI 1996, Tretjakov leg. (MPU); 1 ♀, Osh Prov., Lailak Distr., 15 km S of Ravat, 2600 m, 17 VI 1996, A. Puchkov leg. (cPCH); 2 ♀, Osh Prov., Lailak Distr., N slope of Turkestan Mountain Range, Ozgorysh – Birksu rivers, 2800 m, 12–13 VI 1996, A. Puchkov leg. (ZISP); 1 ♀, N slope of Turkestan Mountain Range, upper Birksu (right tributary of Lailak River), 13 VI 1996, I. Kabak leg. (cIKAB).

Distribution (Fig. 71a). Northern slopes of east portion of Turkestan Mountain Range, southern Kirghizia.

Etymology. The subspecies epithet refers to Lailak, the name of the river and the village in Turkestan Mountain Range.

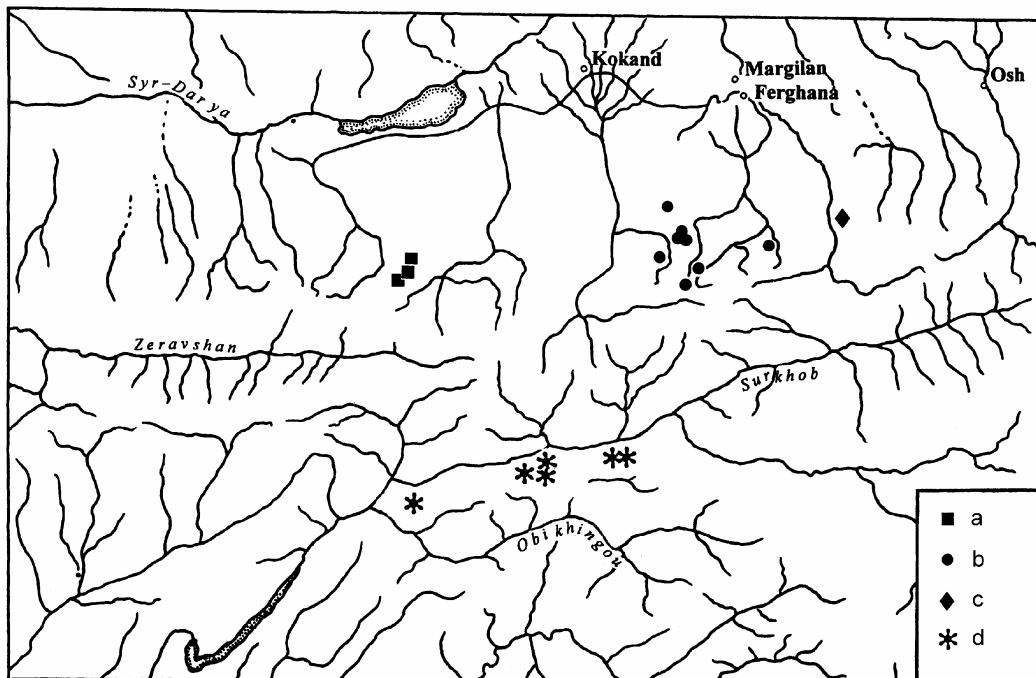


Fig. 71. *Harpalus* Latr., distribution. a – *H. ingenuus lailakensis* ssp. n.; b – *H. i. ingenuus* Tschitsch.; c – *H. i. alajanicus* Tschitsch.; d – *H. arcuatus* Jedl.

Remarks. This taxon is most similar in habitus to the nominotypical subspecies but notably distinguished from it as well as from *H. i. alajanicus* and *H. arcuatus* by the aedeagus with the strongly oblique apical capitulum and the much larger basal tooth in the internal sac.

***Harpalus arcuatus* Tschitschérine, 1898** (Figs 53, 55, 57, 68–70, 71d)

Harpalus arcuatus Tschitschérine, 1898: 179. Type locality: "Buchara or.: Karategin [historical province]", Peter-the-Great Mountain Range, ca 30–40 km E of Tajikabad, Tajikistan.

Harpalus rhomboides conradti Schaubeger, 1934: 152. Type locality: "Dschilandi [= Dzhilandy], Karategin [historical province]", 2300 m, Peter-the-Great Mountain Range, ca 40 km E of Tajikabad, Tajikistan.

Diagnosis. Median tooth of mentum not prominent, very small and broad, or absent (Fig. 55). Metafemur usually with nine or ten (rarely eight or more than ten) setigerous pores along hind margin. Medial and apical spiny patches in internal sac of aedeagus (Figs 68–70) united in a single formation with very large spines in its basal portion; rarely apical spiny patch separated from combined medial patches by some distance.

Description. On average, larger and more robust than *H. ingenuus* and with broader pronotum; latter rather deeply emarginate apically and basally, more or less convex at basal angles and with very small oval foveae usually isolated from basal pronotal margin by convexities (Fig. 57). Elytra almost not punctured and nonpubescent on lateral intervals and at apex; punctures and setae hardly visible and recognizable only on one, sometimes two external intervals. Dorsal microsculpture, on average, more distinct than that in *H. ingenuus*, usually meshes clearly visible in central part of pronotal disc in both sexes. Apical capitulum of median lobe of aedeagus (Figs 68–70) oblique, with apex directed posteriad; ventral margin of terminal lamella straight or slightly concave ventrally; in internal sac basal tooth much smaller than apical one.

Proportions (based on 7 ♂ and 6 ♀): WP/LP = 1.56–1.66; LE/WE = 1.40–1.45 in male and 1.35–1.42 in female; LE/LP = 2.70–2.84 in male and 2.75–2.90 in female; WE/WP = 1.18–1.25 in male and 1.23–1.30 in female; WHmax/WP = 0.64–0.68 in male and 0.63–0.70 in female; WHmin/WP = 0.52–0.56 in male and 0.55–0.61 in female.

Body size: length 10.7–12.7 mm in male and 11.0–13.0 mm in female; width 4.5–5.5 mm in male and 4.9–5.9 mm in female.

Type material. Lectotype (present designation) of *Harpalus arcuatus*: ♀ labelled "Karategin, 22.VI.89 Gr.[ombczewsky]", "*Harpalus arcuatus* m. typ.", "Lectotypus, *Harpalus arcuatus* Tsch., Z. Mlynář det., 1976" (ZISP). Paralectotype labelled as that by Z. Mlynář in 1976: ♀, "Karategin, 22.VI.89, G.[ombczewsky]" (ZISP).

Paratype of *Harpalus rhomboides conradti*: ♀ labelled "Buchara, Karategin, 3200 m, 21.VI.89, Conradt S.", "Cotype", "*Harpalus rhomboides* s. *conradti* Schaub., loc. class.", "*rhomboides* Sols. s. *conradti* Schaub., det. D.E. Schaub." (OÖLL).

Other material. Tajikistan. Peter-the-Great Mountain Range: 1 ♂, "Buchara oriental.", "Peters-Gebir." (ZISP); 1 ♂, 1 ♀, "Peter-the-Great Mt. R., ca 8000" (ZISP); 1 ♂, northern slope of Peter-the-Great Mountain Range near Tajikabad, 25 VI 1966, Kadyrov leg. (cMIKH); 11 ♂, 8 ♀, 10 km S of Tajikabad, 2500–3000 m, 14, 17 and 21 VI 1969, G. Medvedev leg. (ZISP); 4 ♂, 3 ♀, env. of Ganishou, 3000 m, subalpine zone, 12–22 VI 1969, V. Mikhailov leg. (ZISP, cMIKH); 2 ♂, same locality, 20 VI 1987, Odnosum leg. (cKAB); 1 ♂, 1 ♀, same locality, 2300 m, E. Komarov leg. (cKOM); 1 ♂, 1 ♀, 20 km SW of Tajikabad, 2100–2300 m, 13 VI 1989, E. Komarov leg. (cKOM); 1 ♂, "Buchara, Karategin", "f. d. *coerulea*", "*rhomboides* Sols. s. *conradti* Schaub." (OÖLL); 1 ♀, "Buchara, Karategin", "f. *viridis*", "*rhomboides* Sols. s. *conradti* Schaub." (OÖLL); 1 ♂, "Buchara or., Kamscharach" [determined by E. Schaubeger as "*H. rhomboides elongatulus* Schaubeger", latter taxon never been described] (OÖLL).

Distribution (Fig. 71d). This species seems to be endemic to the Peter-the-Great Mountain Range, Tajikistan.

Remarks. *H. arcuatus* was described from two females collected not far from Dzhilandy on the 22nd of June 1889 by B. Grombczewsky who, together with S. Conradt, intersected Peter-the-Great Mountain Range in its eastern portion across Gardami-Kaftar Pass (Grombczewsky, 1958). Schaubeger (1934) confused *H. arcuatus* with *H. rhomboides* and described this taxon again as a subspecies of the latter from the same collection (four females collected by S. Conradt in Dzhilandy on the 21st of June 1889). The identity of the both taxa was already stated by me (Kataev in Kryzhanovskij et al., 1995: 146).

The *affinis* group

Diagnosis. Medium-sized beetles; submentum with one seta on each side; pronotum with sides and basal angles more or less widely rounded; basal pronotal edge ciliate; elytra with rounded humeral angles

lacking denticles; abdominal sternites with long additional setae; apex of anal sternum clearly emarginate in male, angulate and thick in female; ventroapical tubercle of protibia with two spines at apex; inner surface of male mesotibia with small preapical tubercle; tarsi without distinct pubescence dorsally; terminal lamella of aedeagus short and wide.

Remarks. The *affinis* group was revised in one of my preceding papers (Kataev, 1987), in which I also discussed its relationships, geographic distribution and some aspects of the genesis. At present, this group includes 13 Palearctic species: *H. affinis* (Schrank, 1781); *H. aesculanus* Pantel, 1888; *H. uniformis* Motschulsky, 1844 with two subspecies *H. u. uniformis* Motschulsky, 1844 and *H. u. staudingeri* Jedlička, 1953; *H. tjanschanicus* Semenov, 1889; *H. glasunovi* Kataev, 1987 with three subspecies *H. g. glasunovi* Kataev, 1987, *H. g. spinulifer* ssp. n. and *H. g. opaculus* ssp. n.; *H. anisodactyliformis* Solsky, 1874; *H. ganssuensis* Semenov, 1889 (= *H. amdoensis* Semenov, 1889); *H. erosus* Mannerheim, 1825; *H. lethierryi* Reiche, 1860 with two subspecies *H. l. lethierryi* Reiche, 1860 and *H. l. azrouanus* Emden & Schauburger, 1932; *H. bucharius* Tschitschérine, 1898; *H. michailovi* Kataev, 1987; *H. caeruleatus* Bates, 1878 (= *H. pewtzowi* Tschitschérine, 1897); *H. kabakovi* Kataev, 1987, and one American-Asian species, *H. amputatus* Say, 1830 with four subspecies *H. a. amputatus* Say, 1830; *H. a. amputatoides* Mlynář, 1979; *H. a. obtusus* Gebler, 1833, and *H. a. inschanicus* Breit, 1914. The group is the most diverse in arid and semiarid areas of Middle Asia. The *affinis* group belongs to the *affinis* phylogenetic stock, which includes also five other related species-groups: the *semenowi* (two species), *hospes* (seven species), *distinguendus* (four species), *oblitus* (six species) and *crates* (one species) groups (Kataev, 1984, 1987, 1993; Kryzhanovskij et al., 1995). The main distinctive characters of the *affinis* stock are: anal sternum with pronounced sexual dimorphism (apex angulate and thick in female, rounded or emarginate in male), mesotibia of male with a preapical tubercle on inner surface, ventroapical tubercle of protibia with two spines at apex; submentum with one seta on each side; pronotum with ciliate basal edge; abdominal sternites in most species with long additional setae; median lobe of aedeagus usually with a short and wide terminal lamella and without large teeth in internal sac (Kataev, 1987). Most species of the *affinis* stock are distributed over Tethyan (= Ancient Mediterranean) Region of the Palearctic.

***Harpalus glasunovi* Kataev, 1987**

Harpalus glasunovi Kataev, 1987: 23.

Diagnosis. Within the *affinis*-group, *H. glasunovi* may be distinguished by the following combination of characters: apterous, elytral intervals not punctured and not pubescent, preapical situation of elytra present, metepisterna measured along inner and anterior margins approximately as long as wide, elytral striae not punctured, slightly impressed, basal foveae of pronotum very small, not punctured or with few punctures inside of and occasionally around them, and aedeagus with or without spines in internal sac (fine spiny patches in internal sac absent).

Remarks. *H. glasunovi* was described from the specimens collected in Kirghiz and Talas Mountain Ranges. In the original description I stated (Kataev, 1987: 25) that the species demonstrates geographic variation in several morphological characters and apparently consists of several geographic forms, each with uncertain taxonomic rank at that time. Based on the extensive material collected in various mountain ranges of Tien Shan during last years, I consider *H. glasunovi* a polytypic species with three subspecies.

Key for determination of subspecies

1. Head usually with more or less distinct microsculpture on frons and vertex (in male meshes obliterate). Basal foveae of pronotum not punctured. Body robust and rather convex. Apical portion of median lobe of aedeagus (Figs 86–89) almost straight, with thin terminal lamella more or less clearly directed dorsad; internal sac without spines *H. glasunovi opaculus* ssp. n.
- Head without microsculpture on frons and vertex. Basal foveae of pronotum usually punctured. Body rather flat and elongate. Apical portion of median lobe of aedeagus (Figs 74–83) almost straight or weakly bent ventrad, with rather thick terminal lamella also directed ventrad; internal sac with or without spines 2

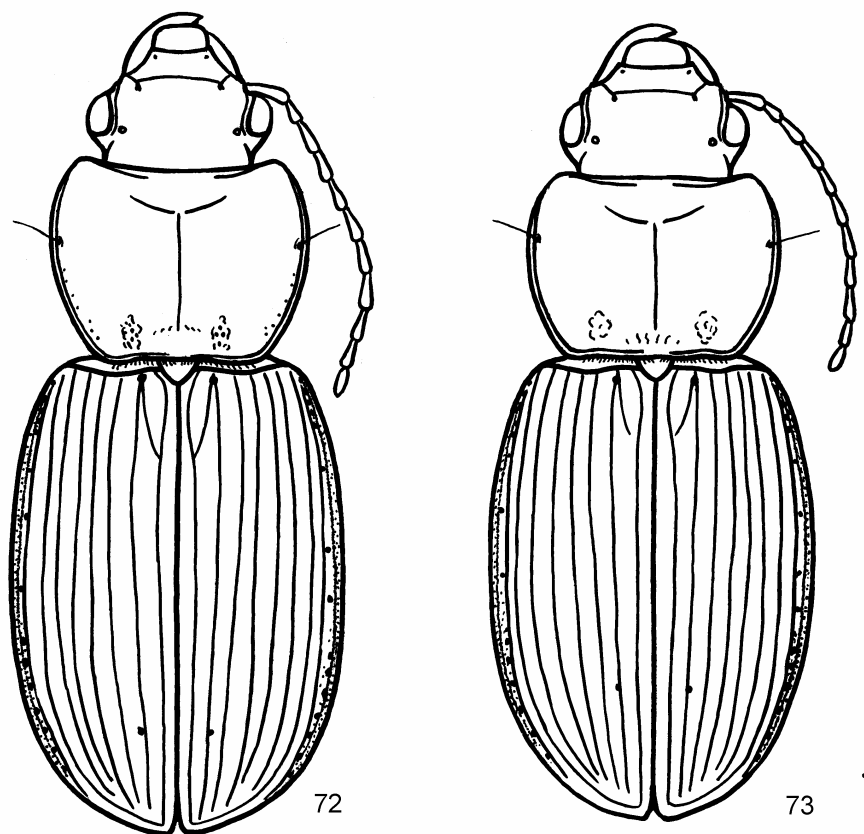
2. Internal sac of aedeagus (Figs 74–79) with at most one small spine medially. Apical portion of median lobe almost straight or weakly bent ventrad. Body, on average, smaller and with less prominent preapical sinuation of elytra *H. glasunovi glasunovi*
- Internal sac of aedeagus (Figs 80–83) with winding row of small spines on left side and usually larger spine on right side medially. Apical portion of median lobe more strongly bent ventrad. Body, on average, larger and with more prominent preapical sinuation of elytra *H. glasunovi spinulifer* ssp. n.

***Harpalus glasunovi glasunovi* Kataev, 1987** (Figs 72, 74–79, 90a)

Harpalus glasunovi Kataev, 1987: 23. Type locality: “Magbal Pass”, Kirghiz Mountain Range, Kazakhstan/Kirghizia.

Diagnosis. The nominotypical subspecies is recognizable by the body rather flat and comparatively narrow, with fine dorsal microsculpture (meshes on frons and vertex are absent), the pronotum usually punctured in basal foveae, and the median lobe of the aedeagus with at most one small spine in the internal sac medially. The apical portion of the median lobe is almost straight, with a rather thick terminal lamella.

Type material. Holotype: ♂, “пер. Магбал, Александровский хр., Семиреч. обл., Кириченко, 4 VI 1910” [Magbal Pass, Aleksandrovskiy (= Kirghiz) Mt. R., Semirech.[ye] Prov., Kiritshenko, 4 VI 1910], “К. Глазунова” [Coll. Glazunov], “Holotypus, *Harpalus glasunovi* Kataev, 1986” (ZISP). Paratypes: 6 ♂, 3 ♀, same data, also 4 VI and 8 VI 1910, Kiritshenko and Golbek leg. (ZISP); 9 ♂, 5 ♀, “2 v.[ersty] N of Magbal Pass, 4 VI 1910, Golbek” (ZISP).



Figs 72, 73. *Harpalus glasunovi* Kat., habitus. 72 – *H. g. glasunovi* (Magbal), 73 – *H. g. opaculus* ssp. n. (Western Karakol). Scale = 5.0 mm.

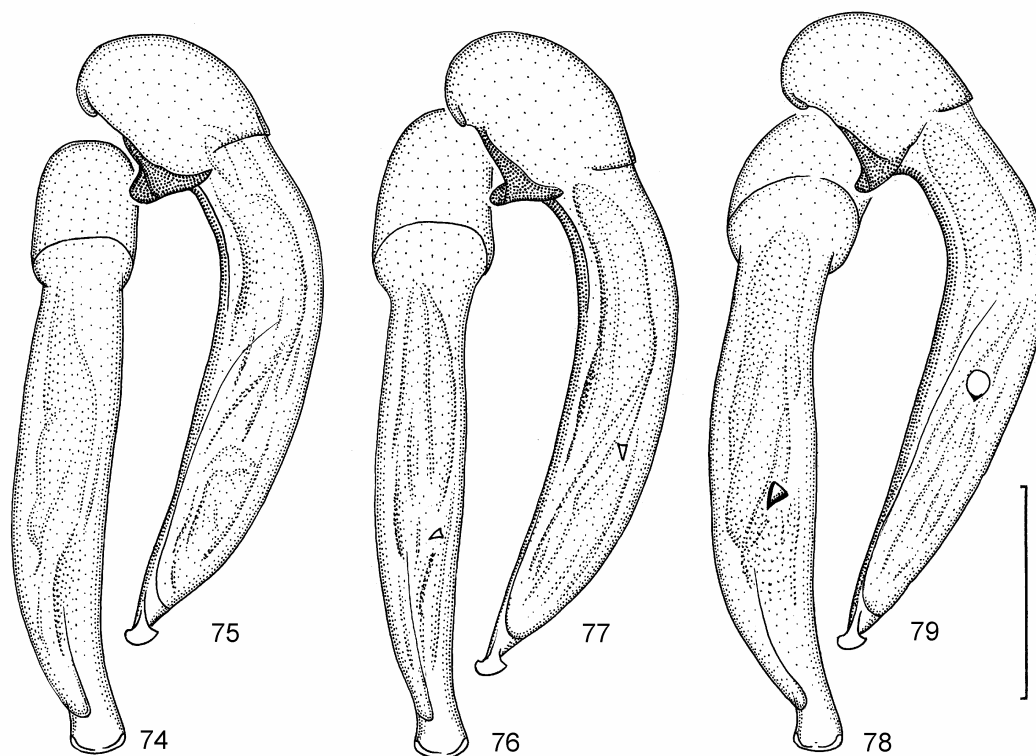
Other material. K a z a k h s t a n . 5 ♂, 3 ♀, Kirghiz Mt. R., W of Mulaly, S of Merke, 2000–3300 m, 15 VIII 1996, A. Zhdanko leg. (ZISP; cIKAB).

Description. Comparatively small: 9.4–10.7 mm in male and 9.5–11.3 mm in female. Body (habitus: Fig. 72) weakly convex, dorsum rather shiny, occasionally with weak green or blue hue. Head without microsculpture on frons and vertex. Pronotum weakly but clearly narrowed basad, usually with very fine punctures in basal foveae and in very narrow area along sides; occasionally punctures present also around basal foveae, rarely pronotal surface almost not punctured, with few punctures along sides. Microsculpture in central portion of disc in male absent or rather strongly obliterate (microsculpture somewhat distinct in one male from W of Mulaly), in female meshes usually recognizable, but also rather strongly obliterate. Elytra with moderately strong or rather weak preapical sinuation. Microsculpture on elytral disc in male fine, slightly obliterate, in female distinct. Median lobe of aedeagus (Figs 74–79) in lateral aspect with almost straight apical portion, at most weakly curved ventrad, terminal lamella somewhat thick, internal sac at most with one small spine on right side medially.

Proportions (based upon 9 ♂ and 6 ♀): WP/LP = 1.32–1.43; LE/WE = 1.37–1.47 in male and 1.34–1.44 in female; LE/LP = 2.31–2.44 in male and 2.39–2.50 in female; WE/WP = 1.19–1.26 in male and 1.22–1.29 in female.

Variation. In the specimens from the west of Mulaly, the preapical sinuation of elytra is rather weak, much shallower than that in the specimens from Magbal Pass. In addition, the spine in the internal sac of the aedeagus of the specimens from there is always present and larger (Figs 78, 79) than that of the specimen from Magbal Pass (Figs 76, 77); in one of the males from Mulaly this spine has two apices.

Distribution (Fig. 90a). Western portion of Kirghiz Mountain Range from Magbal Pass in the west up to the Merke River in the east, Western Tien Shan.



Figs 74–79. *Harpalus glasunovi glasunovi* Kat., median lobe of aedeagus (74–77 – Magbal; 78, 79 – Mulaly). 74, 76, 78 – dorsal aspect; 75, 77, 79 – lateral aspect. Scale = 1.0 mm.

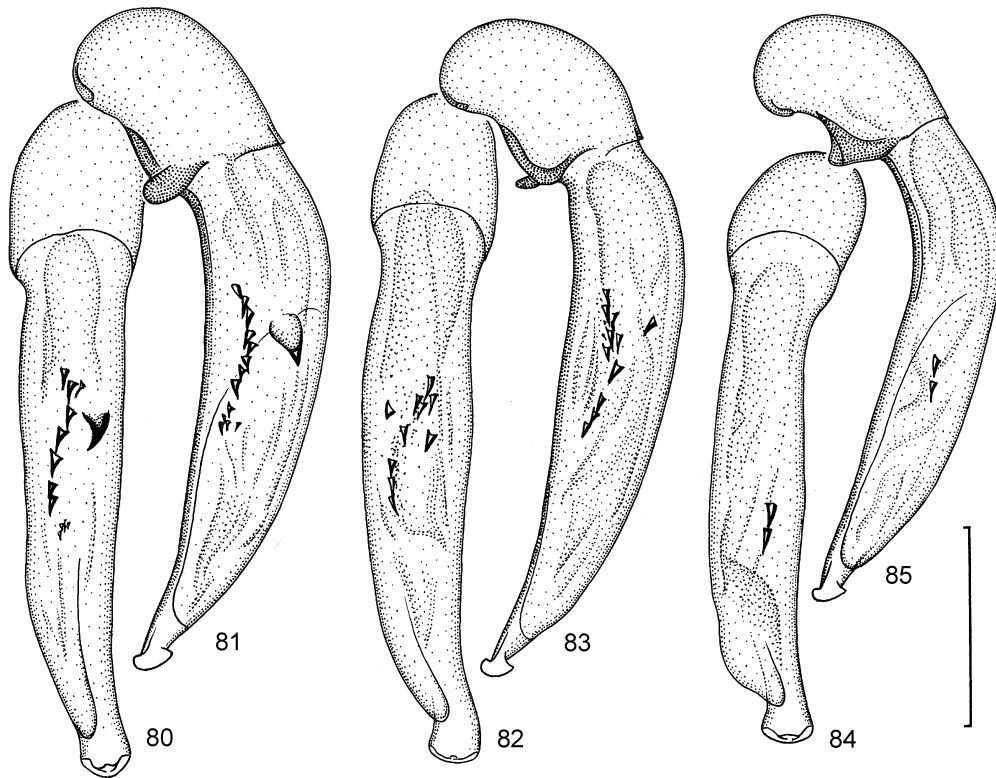
***Harpalus glasunovi spinulifer* Kataev, ssp. n. (Figs 80–83, 90b)**

Diagnosis. In appearance, this subspecies is rather similar to the nominotypical one, but the internal sac of the aedeagus has a winding row of small spines on the left side and in most of examined specimens also a larger spine on the right side medially. Apical portion of the median lobe is more strongly bent ventrad. Body larger, elytra longer and with stronger preapical sinuations.

Description. Comparatively large: 10.3–11.2 mm in male and 10.6–11.5 mm in female. As in *H. g. glasunovi*, body weakly convex, dorsum black, rather shiny, rarely with weak green or blue hue. Head without microsculpture on frons and vertex. Pronotum weakly but clearly narrowed basad, with fine punctures in basal foveae and in very narrow area along sides; in some specimens punctures present also in areas around basal foveae, occasionally pronotal surface almost not punctured, with few punctures along sides. Microsculpture in central portion of disc in male rather strongly obliterate, but meshes usually recognizable; in female meshes more distinct, but also obliterate. Elytra relatively longer than those in *H. g. glasunovi*, with rather strong preapical sinuation. Microsculpture on elytral disc distinct, in male fine, in female almost granulate. Median lobe of aedeagus (Figs 80–83) with apical portion markedly bent ventrad, terminal lamella in lateral aspect somewhat thick, internal sac with winding row of small spines on left side and larger spine on right side medially.

Proportions (based upon 15 ♂ and 8 ♀): WP/LP = 1.30–1.48; LE/WE = 1.43–1.50 in male and 1.41–1.47 in female; LE/LP = 2.37–2.63 in male and 2.46–2.62 in female; WE/WP = 1.18–1.28 in male and 1.22–1.32 in female.

Variation. In the specimens from Chatkal Mountain Range, on average, the pronotum is wider and the elytra are relatively narrower and longer than those in the specimens from Talas Mountain Range. In addition, the apical portion of the median lobe of the aedeagus in the specimens from Chatkal Mountain Range is less strongly curved ventrad; in one male from there (Dzhany-Bazar environs) the right larger spine in the internal sac is absent (Figs 82, 83); in other specimens examined from Chatkal Mountain Range this spine is present similarly to the specimens from Talas Mountain Range (Figs 80, 81).



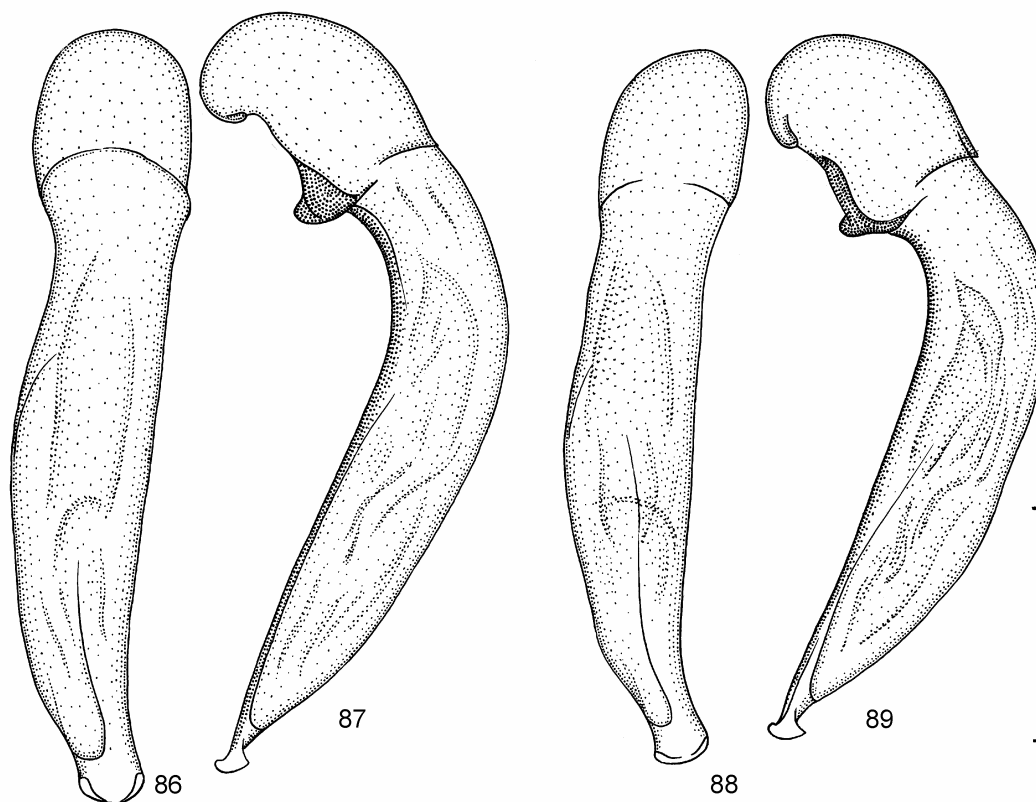
Figs 80–85. *Harpalus glasunovi* Kat., median lobe of aedeagus. 80–83 – *H. g. spinulifer* ssp. n. (80, 81 – Kuramator, holotype; 82, 83 – Mazar-Bashi); 84, 85 – form supposedly intermediate between *H. g. spinulifer* ssp. n. and *H. g. opaculus* ssp. n. (Besh-Tash, 30 km SSE of Talas). 80, 82, 84 – dorsal aspect; 81, 83, 85 – lateral aspect. Scale = 1.0 mm.

Proportions. Specimens from Talas Mountain Range: WP/LP = 1.30–1.40; LE/WE = 1.43–1.50 in male and 1.40–1.47 in female; LE/LP = 2.37–2.52 in male and 2.46–2.56 in female; WE/WP = 1.23–1.28 in male and 1.25–1.32 in female. Specimens from Chatkal Mountain Range: WP/LP = 1.41–1.48; LE/WE = 1.48–1.50 in male and 1.41–1.45 in female; LE/LP = 2.51–2.63 in male and 2.50–2.62 in female; WE/WP = 1.18–1.25 in male and 1.20–1.24 in female.

Type material. Holotype: ♂, Kirghizia, Talas Mountain Range, upper Kuramator River, basin of Kumyshtag River, 3500 m, 11 V 1991, I. Kabak leg. (ZISP). Paratypes. Kirghizia. Talas Mt. R.: 19 ♂, 8 ♀, same data as holotype (cIKAB; ZISP; cFCC; cWR); 1 ♂, N slope of Talas Mt. R., upper part of Kashkasu River, 3000 m, 26 VI 1998, A. Putshkov leg. (cPCH); 2 ♂, 1 ♀, S slope of Talas Mt. R., upper course of right tributary of Chatkal River, S of Aktash Pass, 2800–3000 m, 12 V 1991, I. Kabak leg. (cIKAB; ZISP); 2 ♂, 1 ♀, S slope of Talas Mt. R., Kara-Kasmak River, 30 V 1997, S. Ovchinnikov leg. (cOVCH; ZISP); 2 ♂, road Kirovskoe–Kanysh-Kyia, Kara-Buura Pass, S slope, ca 50 km SSW of Kirovskoe, 7 VI 1996, J. Kaláb leg. (cKAL); Chatkal Mountain Range: 28 ♂, 4 ♀, N slope of Chatkal Mt. R., upper Ayuu-Chachy River, 12 km ES of Chakmak-Suu Vill., 2900–3300 m, 26 VI 1997, I. Kabak leg. (cIKAB; ZISP); 1 ♂, 1 ♀, N slope of Chatkal Mt. R., upper Ayuu-Chachy River, S Chakmak-Suu Vill., 2200–2300 m, 25 VI 1997, I. Kabak leg. (cIKAB); 1 ♂, 3 ♀, N slope of Chatkal Mt. R., upper Mazar-Bashi River, SE of Dzhanly-Bazar, Kochkorata 1, 3300 m, 21 VI 1997, I. Kabak leg. (cIKAB; ZISP).

Distribution (Fig. 90b). This subspecies is distributed over Western Tien Shan, where it is known from the northern and southern slopes of the western portion of Talas Mountain Range and the northern slopes of the northern portion of Chatkal Mountain Range. All localities are within Kirghizia.

Etymology. The subspecies epithet is based on two Latin words, *spinula* and *fero*, and refers to the spines in the internal sac of the aedeagus of this new taxon.



Figs 86–89. *Harpalus glasunovi opaculus* ssp. n., median lobe of aedeagus (86, 87 – Western Karakol, holotype; 88, 89 – Onura). 86, 88 – dorsal aspect; 87, 89 – lateral aspect. Scale = 1.0 mm.

***Harpalus glasunovi opaculus* Kataev, ssp. n.** (Figs 73, 86–89, 90c)

Diagnosis. Notably differs from other subspecies in having the body more convex and robust, and the dorsum with more distinct microsculpture (at least on frons and vertex meshes are recognizable). In addition, the median lobe of the aedeagus has the apical portion directed slightly dorsad and without any spines in the internal sac. The terminal lamella in lateral aspect is thinner.

Description. Medium-sized: 9.3–10.8 mm in male and 9.7–12.2 mm in female. Body (habitus: Fig. 73) convex and more robust, dorsum black, rather dull, without blue or green hue. Head usually with more or less distinct microsculpture on frons and vertex (in male meshes obliterate). Pronotum wider than that in other subspecies, weakly narrowed basad, usually not punctured even in basal foveae; occasionally with few punctures along sides. Microsculpture in central portion of disc recognizable, in male often obliterate, in female constantly rather distinct. Elytra relatively wider than those of other subspecies, with rather weak preapical sinuation. Microsculpture on elytral disc distinct, in male fine, in female almost granulate. Median lobe of aedeagus (Figs 86–89) with apical portion rather straight in lateral aspect (ventral margin usually very widely rounded as in Fig. 87) and slightly directed dorsad, terminal lamella in lateral aspect rather thin, internal sac without any spines.

Proportions (based upon 7 ♂ and 5 ♀): WP/LP = 1.38–1.54; LE/WE = 1.33–1.45 in male and 1.28–1.39 in female; LE/LP = 2.28–2.63 in male and 2.32–2.65 in female; WE/WP = 1.15–1.27 in male and 1.21–1.34 in female.

Type material. Holotype: ♂, Kirghizia, Kirghiz Mt. Range, Western Karakol gorge, right tributary of Chon-Chichkan River, 15 V 1990, I. Belousov leg. (ZISP). Paratypes. Kirghizia. Kirghiz Mountain Range: 5 ♂, 1 ♀, same data as holotype (ZISP; cBEL; cWR); 6 ♂, 3 ♀, Karakol River, Aleksandrovskiy [= Kirghiz] Mt. R., Pishpek uezd [= Bishkek Distr.], Semirechje, 27 VII 1913, Chernavin leg. (ZISP); 1 ♀, S slope of Kirghiz Mt. R., Western Karakol River, 30 km ENE of Tunuka, 23 VI 1990, G. Medvedev leg. (ZISP); 3 ♂, 1 ♀, S slope of Kirghiz Mt. R., Western Karakol, 16 V 1990, I. Kabak leg. (cIKAB); 1 ♂, Tyuz-Ashu Pass, 4 VIII 2000, V. Dubatolov leg. (ZISP); 3 ♂, southern slope of Kirghiz Mt. R., near Tyuz-Ashu Pass, 3000 m, 30 VI 1966 E. Gurjeva leg. (ZISP); 18 ♂, 10 ♀, S of Tokmak, Tuyuk-Kelter (Kegety) Pass, 2000–3000 m, 12 V 1986, I. Belousov leg. (cBEL; ZISP); 1 ♂, 1 ♀, Kyrkaragay River, Tuyuk Valley, 3200 m, 12 V 1986, I. Belousov leg. (cIKAB); 1 ♀, Kegety Valley, 10 VI 1994, S. Ovchinnikov leg. (cOVCH); 2 ♀, Issyk-Ata River, 2400–3000 m, 12 V 1990, I. Kabak leg. (cIKAB); 1 ♀, left bank of Issyk-Ata River, 2200–2300 m, 10 V 1990, I. Kabak leg. (cIKAB); 1 ♂, 1 ♀, 15 km S of Orlovka, 20 VI 1992, S. Ovchinnikov leg. (cOVCH; ZISP). Talas Mountain Range: 1 ♂, 2 ♀, 40 km N of Toktogul, Chichkan, 2300–2800 m, 15 VII 1977, G. Medvedev leg. (ZISP). Susamyр Mountain Range: 1 ♂, Kobyksu River, 28 VII 1993, S. Ovchinnikov leg. (cOVCH); 1 ♀, same locality, 2400 m, 7 VII 1987, S. Ovchinnikov leg. (cOVCH); 2 ♂, 1 ♀, Alabel Pass, 24 V 1982, S. Ovchinnikov leg. (cOVCH); 1 ♂, 1 ♀, same locality, 3200 m, 4–7 VI 2001, Irtlach leg. (cPCH); 1 ♂, same locality, 9–10 VI 1999, Klimenko leg. (ZISP); 3 ♂, 2 ♀, same locality, 3100 m, 9–10 VI 1999, Klimenko leg. (cKLM; cIKAB); 1 ♀, S slope of Alabel Pass, 26 V 2000, A. Klimenko leg. (cKLM); 2 ♂, same data but 3000 m, 5 VI 2000 (cKLM); 2 ♂, 30 km E of Alabel Pass, 1 VII 1997, S. Ovchinnikov leg. (cOVCH; ZISP); 1 ♂, right bank of Kokomeren, env. of Kyzyluy, 2000 m, 7–8 VI 2000, S. Moschennikov leg. (ZISP); 1 ♀, Susamyр River, below Tyuz-Ashu Pass, 2700 m, 2 VII 1995, A. Puchkov leg. (cPCH). Sonkultoo Mountain Range: 3 ♂, 1 ♀, Balykty Mt. R., W of Lake Son-Kul, western slope of Karakeche Pass, 3200 m, 19 VI 1993, I. Kabak leg. (cIKAB); 1 ♀, Schilibili, 9 VII 1987,

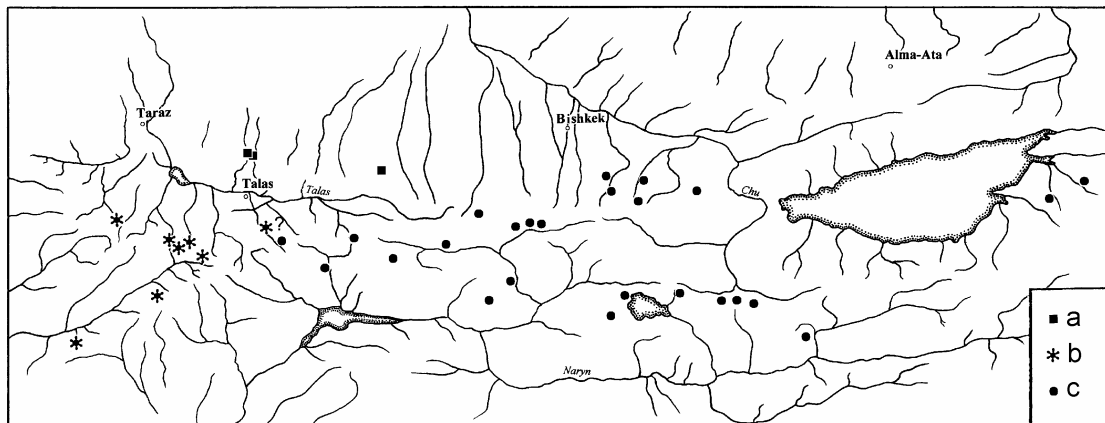


Fig. 90. *Harpalus glasunovi* Kat., distribution. a – *H. g. glasunovi*; b – *H. g. spinulifer* ssp. n.; c – *H. g. opaculus* ssp. n.

S. Ovchinnikov leg. (cOVCH). Baydula Mountain Range: 1 ♀, Baydula Mt. R., VI 1979, Ganagyn leg. (cOVCH); 1 ♀, northern slope of Baydula Mt. R., Kalmakashu River, 3000 m, 16 VI 1993, I. Kabak leg. (cIKAB); 1 ♀, Dolon Pass, 2600 m, 7 VII 1966, Yu. Tarbinskij leg. (cOVCH); 1 ♂, Dolon Pass, 2700–3200 m, 23–25 VII 1991, S. Bečvář leg. (cSCK; cWR); 1 ♂, 3 ♀, same locality, 2500–3200 m, 23–25 VII 1991, J. Turna leg. (cWR); 1 ♂, S slope of Baydula Mt. R., 2700–2900 m, 22 VI 1994, A. Molchanov leg. (cIKAB). Karadzhorgo Mountain Range: 1 ♂, 2 ♀, N of Akkaya Pass, 3100 m, 19 VI 1994, A. Molchanov leg. (ZISP). Onura Mountains: 3 ♂, 2 ♀, 10 km of confluence of Naryn River and Malyj Naryn River, 16 VII 1990, G. Medvedev leg. (ZISP). Terskey Alatau: 1 ♂, Dzhetyoguz, 30 km SW of Przhevalsk, 3500 m, 15 VII 1991, P. Čechovsky leg. (cWR); 2 ♂, 1 ♀, Teploklyuchenka Vill., 6 VIII 1946, Kryltsov leg. (cOVCH; ZISP).

Additional material (? transition to *H. g. spinulifer* ssp. n.). 1 ♂, Talas Mt. R., Besh-Tash, 30 km SSE of Talas, 5 VII 1990, G. Medvedev leg. (ZISP); 1 ♀, Talas Mt. R., Besh-Tash, 45 km SSE of Talas, 3000 m, 4 VII 1990, G. Medvedev leg. (ZISP).

Variation. Elytra of the specimens from the northern slopes of Kirghiz Alatau are, on average, relatively longer (LE/WE = 1.39–1.45 in male and 1.33–1.39 in female) and with deeper preapical sinuation than those of the specimens from Inner Tien Shan (LE/WE = 1.33–1.40 in male and 1.28–1.38 in female).

Distribution (Fig. 90c). This subspecies occurs in Northern, Inner and Central Tien Shan. It is known from the northern and southern slopes of the eastern portions of Talas and Kirghiz Mountain Ranges, also from Susamyr, Sonkultoo, Baydula and Karadzhorgo Mountain Ranges, Onura Mountains, and Terskey Alatau. All localities are within Kirghizia.

Etymology. The subspecies epithet refers to the dark and matte surface of the body of the beetles of this taxon.

Remarks. In Talas Mountain Range, the boundary between *H. g. spinulifer* ssp. n. and *H. g. opaculus* ssp. n. seems to run along the region adjacent to the Besh-Tash gorge. The single male examined from Besh-Tash (30 km SSE of Talas) is intermediate in its morphological characters between these two subspecies. The median lobe of the aedeagus (Figs 84, 85) is similar in shape to that of *H. g. opaculus* ssp. n., but the terminal lamella is thicker and the internal sac is with two spines medially (apparently homologous to the winding row of spines in *H. g. spinulifer* ssp. n.). In external characters, this male is very similar to *H. g. spinulifer* ssp. n.: the dorsal microsculpture is fine (meshes on frons and vertex are not recognizable), the basal foveae of pronotum are punctured, and the preapical sinuations of elytra are rather distinct. It is interesting to note that the single female examined from the Besh-Tash gorge which was collected a little closer to the range of *H. g. opaculus* ssp. n. (45 km SSE of Talas) is not dissimilar from the females of this subspecies. The both specimens are very small: body length 9.6 mm in male and 8.8 mm in female. Proportions: in male WP/LP = 1.39; LE/WE = 1.44; LE/LP = 2.48; WE/WP = 1.23; in female WP/LP = 1.41; LE/WE = 1.42; LE/LP = 2.54; WE/WP = 1.27.

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